

FILLING THE VOID: RECONNECTING THE URBAN FABRIC OF ATLANTA

by

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(Under the Direction of HANK METHVIN)

ABSTRACT

In order to reconnect the urban fabric of Atlanta, this thesis looks for an integrated solution based on physical, contextual and ecological dimensions. Based on three dimensions, design criteria are developed to give concrete guidelines for the design projects. The design criteria include figure-ground clarity; connection, continuity & corridor; accessibility; identity; diversity & mixture; and multi-functionality. Four case studies are chosen from Boston to analyze how the design criteria can be integrated with each other at different scales. They are the Central Artery/Tunnel project, the Emerald Necklace, the North End, and the park at Post Office Square. Besides exploring how these design criteria were achieved in the precedents, they are also applied to fill the void of the Atlanta Civic Center site. Three scale designs—the district scale, the neighborhood scale, and the intimate scale—are illustrated to show the possible solutions for reconnecting the urban fabric of Atlanta.

INDEX WORDS: Physical, Contextual, Ecological, Figure-ground clarity, Connection, Continuity, Corridor, Accessibility, Identity, Mixture, Multi-functionality, Multiple scales, Central Artery/Tunnel, Emerald Necklace, North End, Park at Post Office Square, Urban fabric of Atlanta

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DEDICATION

This is for my grandfather who made me realize what the most important things are in my life. This is also for my grandmother, my parents, Alex, and Grace for their unconditional love and supports in this long learning journey.

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CHAPTER 1 THESIS STATEMENT

In the 1980's, Rem Koolhaas came to Atlanta with an intuition that the real late twentieth-century city could be found there. One of his observations was "Atlanta's basic form—but it is not a form—its basic formlessness is generated by the highway system, a stretched X surrounded by an O: branches running across the city connecting to a single perimeter highway." (Office for Metropolitan Architecture, Koolhaas, & Mau, 1998, 836) Nowadays, the issues caused by auto-dominated transportation have been surfacing in the city. First, auto congestion has become part of the citizen's life. Second, the highway gulf divides the city and breaks the connections between different districts. Third, auto centered sprawl has edged out public transport, bicycles, and pedestrians. Fourth, without taking pedestrians' needs into consideration, inward facing buildings are frequently designed as freestanding objects amidst vacant parking spaces and have no interaction with the surrounding streets. The result of this disconnection and isolation is few pedestrians and little street life.

My initial interest that generated this thesis was the relationship, or lack of relationship, between the solid (buildings) and the void (open space) in Atlanta urban landscapes, especially where the highway system crosses the city. Lack of significant relationship between them breaks the continuity of the urban fabric. The site chosen in this thesis, the Atlanta Civic Center and its surrounding district, is a typical example. It is between Midtown and Downtown but it does not quite belong to or connect to either

one. Destroyed by vacant stores and parking spaces, the streets have no active and interesting fronts to link the site with Midtown. The highway system—the Downtown Connector—sets a physical barrier between the site and Downtown. Furthermore, “urban renewal” has wiped out the tight urban grids that once characterized the site. What remains are large blocks, wider roads, and a lot of parking spaces that are empty after working hours are over. Instead of being a destination, the whole site becomes a formless space where people just speed through. Even the Atlanta Civic Center and Sci-Trek located in the site lack a distinctive identity and have suffered from declining visitors. Overall, the site is experiencing the consequence of disconnection, both internally and externally.

In order to reconnect the urban fabric of Atlanta, this thesis looks for an integrated solution based on physical, contextual and ecological dimensions, which are discussed in the second chapter. While the physical dimension examines the relationship between the solid and the void, the contextual dimension focuses on how to create a sense of place and an identity. The ecological dimension brings environmental concerns into urban design and makes sure the site will be a sustainable place for plants and wildlife as well as for people.

Based on three dimensions, design criteria will be developed in the third chapter to give concrete guidelines for the design projects. The design criteria include figure-ground clarity; connection, continuity & corridor; accessibility; identity; diversity & mixture; and multi-functionality. All of these criteria are developed from or are related to more than one dimension. For example, the three dimensions all emphasize the importance of

connection to make a good place. Connection between buildings and spaces is a crucial factor in the physical dimension. Connecting to the existing surroundings and enhancing the sense of place is always one of the core concerns in contextual design. Furthermore, maintaining or creating a corridor to connect different patches fulfills the ecological function of a place.

There are also positive relationships between these design criteria. For instance, the figure-ground clarity helps people form their cognitive maps of a city and enhances the identity of a place. Good accessibility can attract more people into a place. By doing so, it promotes the diversity of a place. Open space systems in cities can have multiple functions by being a place for people, as well as for plants and wildlife. In this way, they not only create diversity and mixture, but also promote a place identity.

Every part of a city should be able to integrate with each other part in order to weave the whole urban fabric of a city. Therefore, I believe all these design criteria should be applied consistently at all different scales. In the fourth chapter, four case studies are chosen from Boston to analyze how the design criteria can be integrated with each other at different scales. Compared with a car city like Atlanta, Boston has been long regarded as “America’s most walkable city”. It is home to the nation's oldest subway tunnel and 4th largest transportation system. Approximately 842,700 one-way passenger trips per day are taken on its subway, bus, commuter rail, commuter boat, and paratransit services. (http://www.mbtta.com/insidethet/taag_ridership.asp) However, with a long history of development, the city also has one of the most congested highways in the United States. Its highway system, the Central Artery, carries about three times

the number of vehicles it carried in 1959 and has become a world-class traffic problem. To solve this problem and reconnect the neighborhoods and the harbor once separated by the highway, a project named the Central Artery/ Tunnel project has been under construction since 1991. It is a good design precedent for the Atlanta site at the district scale. In addition, Boston also owns the first urban greenbelt in America, which is known as the Emerald Necklace. From studying its design concepts, the Atlanta site can get inspiration about how to blend green spaces in the urban context. The next case study is Boston's oldest neighborhood, the North End. It provides the Atlanta site with an excellent example about how to make a vibrant place with a distinctive identity at the neighborhood scale. The last design precedent is the park at Post Office Square, which is a suitable case to learn how to integrate the design criteria at the intimate scale.

Besides exploring how these design criteria were achieved in the precedents, they will also be applied to fill the void of the Atlanta Civic Center site. In the last chapter, three scale designs—the district scale, the neighborhood scale, and the intimate scale—are illustrated to demonstrate the design criteria developed in the thesis and to show the possible solutions for reconnecting the urban fabric of Atlanta.

CHAPTER 2 MULTIPLE DIMENSIONS OF A PLACE

When discussing non-straightforward architecture, Robert Venturi provides his gentle manifesto, “And today the wants of programs, structure, mechanical equipment, and expression, even in single buildings in simple contexts, are diverse and conflicting in ways previously unimaginable... By embracing contradiction as well as complexity, I aim for vitality as well as validity” (Venturi, 1966, 16). He further emphasized that, “I prefer both-and to either-or” (16). Several decades later, the contradiction and complexity of urban cities is more challenging than ever. Such a “both-and” perspective becomes of ultimate importance to satisfy all the functions of an urban place. There are so many different aspects of a place that have to be considered in urban design, such as historical, cultural, economic, physical, social, and ecological. This thesis focuses on the following dimensions of a place: physical, contextual, and ecological—the most commonly used terms to describe environments. They are discussed separately in the following sections. The purpose of explaining them one at a time is purely for convenience of exposition, not because they are independent dimensions. In design processes, they are interdependent on each other and integrate to create a place with three dimensions.

Physical Dimension

Without doubt, city space has to be given a form that has a good integrated relationship between solid building mass and void open space to fulfill physical functions,

which include space for commercial, residential, offices, public space, and circulation infrastructure in urban cities.

For several reasons, such as the highway system, the architecture's practice of large-scale building programs, urban renewal and zoning, the privatization of public space, and changing land use, there are a lot of vacant, unused or leftover spaces in cities. These spaces have become lost, negative, disconnected and contribute to a lack of perceivable edges or form in urban cities (Trancik, 1986; Krier, 1979; Sitte, 1965). In order to find these lost spaces and reconnect them with their surroundings, the first step is to identify the textures and patterns of the urban fabric as well as problems in its spatial order. The second challenge of urban design is to create a physical form serving the diverse functions of a place in the city. In this thesis, three design criteria, which are figure-ground clarity, connection, and accessibility, are derived from the physical dimension to evaluate the quality of spatial order.

Contextual Dimension

Space is a bounded or purposeful void with the potential of physically linking things. It only becomes place when it is given a contextual meaning derived from cultural or regional context. Such contextual qualities can come from the natural landscape or historical references. The former is characteristic of the surrounding region, and the latter may be the typical settlement patterns of the place, the typical qualities of the context, or the immediate history of the site itself. (Carr, Francis, Rivlin, & Stone, 1992. 238) With these contextual qualities, spaces can become places with which people

develop an emotional connection. Then, each place has its associative meanings and its identity that make it unique and distinct from other places.

To reconnect the urban fabric, these contextual qualities should be taken into consideration; otherwise urban spaces will lack a sense of place and have no connection with people. Therefore, identity is one of the design criteria in this thesis to evaluate the contextual qualities of urban places.

Ecological Dimension

In his book, *City Form and Natural Processes: towards a New Urban Vernacular*, Michael Hough argues, “The integration of urbanism and ecology achieved through the design process is our concern here. Design is by definition a problem-solving activity – a process of integration.” (Hough, 1984, 17) He put emphasis on “the establishment of a vernacular landscape whose aesthetic rests, first, on its ecological and functional basis for form, and, second, on the integration of design objectives.” (Hough, 1984, 94) Ann Spirn also claims that “the city must be recognized as part of nature and designed accordingly.” (Spirn, 1984, 5) In short, urban space is a part of the ecological matrix of the city and region. It should be designed to preserve, restore, improve, or create ecological corridors and patches and then becomes a sustainable place.

To achieve this goal, Peter Calthorpe proposes that a broader, more philosophic ecology, which teaches that diversity, interdependence, and whole systems are fundamental to health, should be one of the key dimensions of place (Calthorpe, 1993, 12). Responding to this trend of ecological design, diversity and multi-functionality are two of the design criteria in this thesis.

Summary

In order to create a place serving multiple functions in the urban context, a design calls for integration between physical, contextual, and ecological dimensions. In this thesis, quality of a physical form will be examined specifically by its figure-ground clarity, its internal and external connections, and its accessibility. The contextual meaning of a place is the key to creating associations between a place and people. Identity will be the design criterion to evaluate contextual quality of a place. As to the ecological consideration in urban design, diversity and multi-functionality will be addressed as two of the design criteria to make a place vibrant and sustainable. All of these design criteria will have further discussion in the next chapter.

CHAPTER 3 URBAN DESIGN CRITERIA & SCALES

In thinking of physical, contextual, and ecological dimensions, six design criteria were developed to guide how to fill the void and reconnect the urban fabric.

Figure-ground Clarity

The first design criterion analyzes the physical quality of an urban space by examining the relationships between the relative land coverage of buildings as solid masses (“figure”) and open voids (“ground”). Each urban environment has an existing pattern of solids and voids. By exploring the structure of urban spaces and the generic patterns of mass and voids in a city, figure-ground clarity is a means to identify not only the textures and patterns of the urban fabric but also problems in its spatial order (Trancik, 1986, 98). One of the best illustrations of figure-ground clarity is Giambattista Nolli’s Map of Rome, drawn in 1748 (Figure 1). It graphically illustrates the figure-ground relationship of a traditional city where public space is carved out of the private tissue. The predominant field is a dense and continuous mass, which not only defines open space by giving it an enclosed boundary, but also physically connects the urban fabric. Designers and researchers frequently emphasize such a defined, enclosed boundary of open space as a critical factor in making a public place. In his significant book *City Planning According to Artistic Principles*, Camillo Sitte wrote that “A public urban space

gains much of its sense of place from its enclosed character.” (Sitte, 1979, 20)

Christopher Alexander also argued that outdoor space is considered negative when it is formless while positive space is achieved when there is a sense of definite shape or boundaries associated with the site. (Alexander, 1977, 518) In his research of the social life of small urban space, William Whyte found that people like well-defined places as well. (Whyte, 1980, 21) In a word, the public place should have an enclosed boundary defined by a dense, continuous building mass. This physical quality of a place, figure-ground clarity, is one of the design criteria in this thesis.

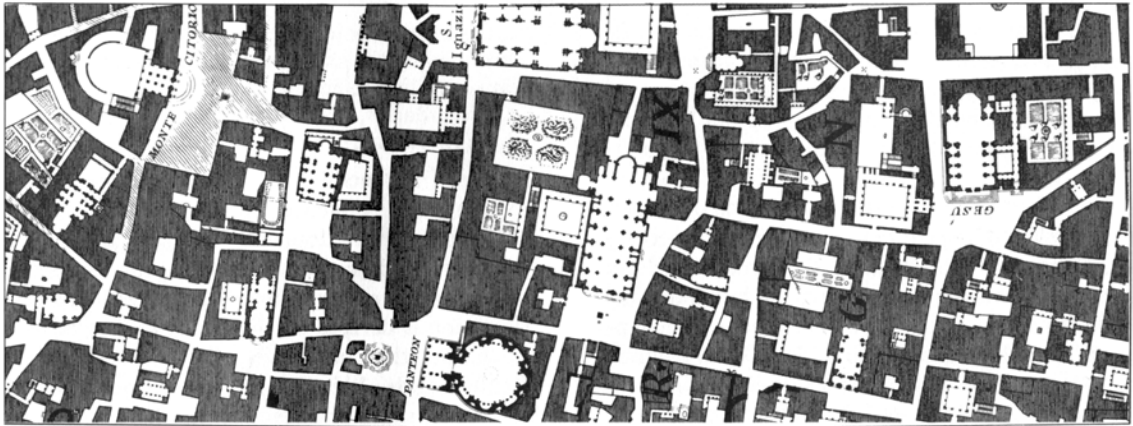


Figure 1 Giambattista Nolli's Map of Rome, 1748.

Source: Trancik, Roger. 1986. *Finding lost space*. New York: Van Nostrand Reinhold. 99.

Roger Trancik has recognized six typological patterns that result from solid-void relationships formed by the shape and location of buildings, the design of site elements (plantings, walls, and et al.), and the channeling of movement. They are grid, angular, curvilinear, radial/concentric, axial, and organic (Figure 2). He also identifies three typical urban solids including public monuments or dominant institutional buildings (A), the field of urban blocks (B), and directional or edge-defining buildings (C); and five

types of urban voids including entry foyers (D), inner-block voids (E), networks of streets and squares (F), parks and gardens (G), and linear open-space systems (H) (Figure 3) (Trancik, 1986, 101-106). The combination of these elements should be able to create numerous spatial orders with the quality of figure-ground clarity.

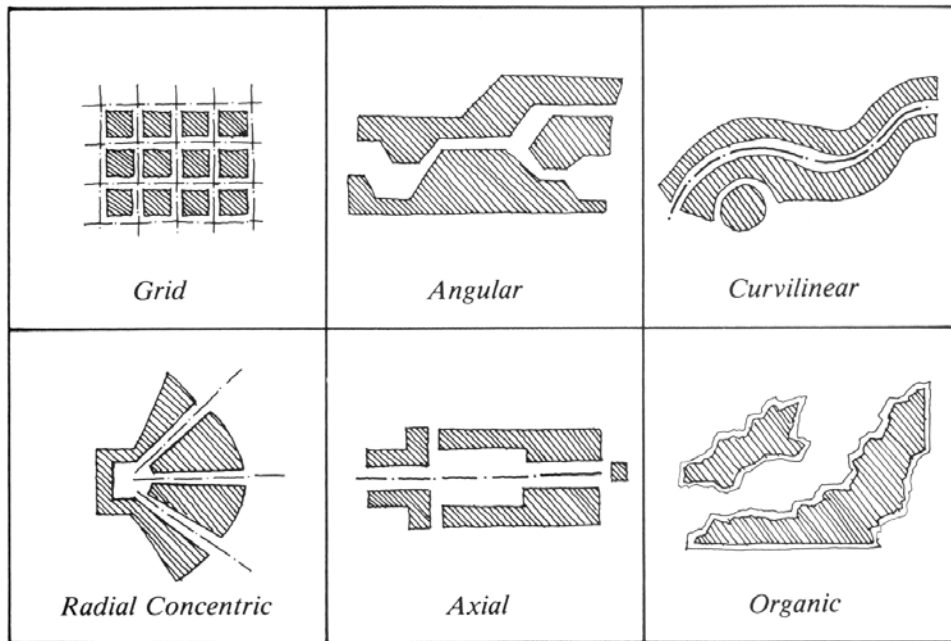


Figure 2 Six Typological Patterns of Solids and Voids.

Source: Trancik, Roger. 1986. *Finding lost space*. New York: Van Nostrand Reinhold. 101.

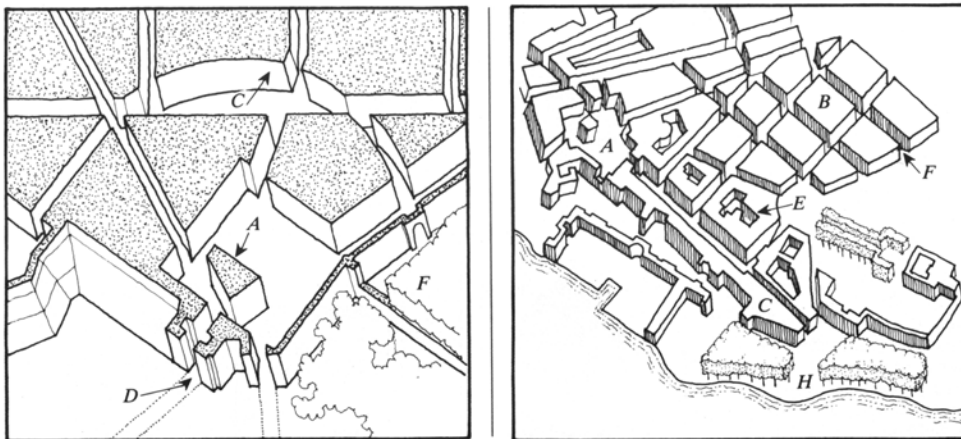


Figure 3 Diagram of the Types of Urban Solids and Voids.

Source: Trancik, Roger. 1986. *Finding lost space*. New York: Van Nostrand Reinhold. 102.

Besides achieving the physical quality of a place, figure-ground clarity also enhances the quality of a place in the contextual dimension. Just as Kevin Lynch explained, “Clarity is, in a small place the sense of how its parts fit together, and in a large settlement the sense of orientation.” (Lynch, 1981, 134) Because of these clear and differentiated forms, people can make strong attachments, whether of past history or of their own experience. Every scene is instantly recognizable, and brings to mind a flood of associations. Part fits into part. The visual environment becomes an integral piece of the inhabitants’ lives. (Lynch, 1960, 92-93) Therefore, an urban form with figure-ground clarity not only physically connects the urban fabric, but also enhances an identity of a place.

Connection, Continuity, and Corridor

The second design criterion is derived from the linkage theory, which involves “lines” connecting one element to another. According to Roger Trancik’s explanation, these lines are formed by streets, pedestrian ways, linear open spaces, or other linking elements that physically connect the parts of a city. (Trancik, 1986, 106)

In his landmark treatise, *Investigations into Collective Form*, Fumihiko Maki discusses several factors that go into the creation of a framework of spatial linkages. Maki addresses linkage as the most important characteristic of urban exterior space, stating that, “Linkage is simply the glue of city. It is the act by which we unite all the layers of activity and resulting physical form in the city...urban design is concerned with the question of making comprehensible links between discrete things. As a corollary, it

is concerned with making an extremely large entity comprehensible by articulating its parts.” (Maki, 1964, 29)

From this emphasis on the linkage theory, Maki defines three different formal types of urban space: compositional form, mega-form, and group form (Figure 4).

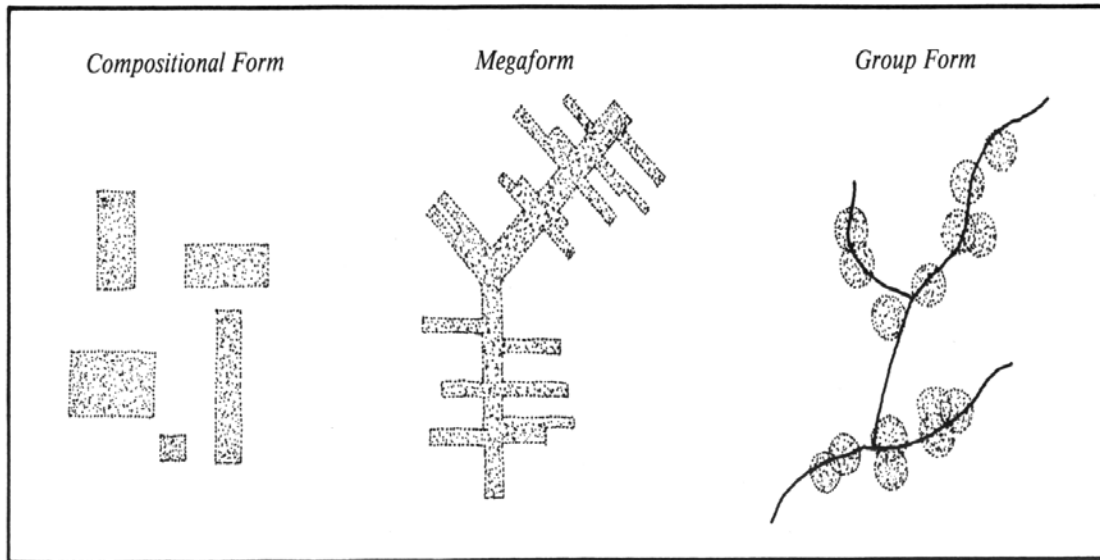


Figure 4 Fumihiko Maki. Three Types of Spatial Linkage.

Source: Trancik, Roger. 1986. *Finding lost space*. New York: Van Nostrand Reinhold. 107.

Compositional form consists of individual buildings in abstract patterns that are composed in a two-dimensional plan. *Linkage* is implied rather than overt, and reciprocal tension is a product of the positioning and shapes of freestanding objects.

The second one is *mega-form*, in which individual components are integrated into a larger framework in a hierarchical, open-ended, and interconnected system. *Linkage* is physically imposed to make a structure. This type of urban form has the advantage of efficiency in ordering varied functions and investment within a simple infrastructure.

Group form results from an incremental accumulation of structures along an armature of

communal open space, and linkage is naturally and organically evolved. Historic towns and villages have tended to develop in this pattern. (Trancik, 1986, 106-112)

Generally, Maki's linkage theory analyzes and highlights how to make connections between objects in terms of physical forms. There is a wide spectrum of applications of these three types of forms in urban design. For example, the *compositional form* can integrate with the figure-ground clarity to create an outdoor room. This outdoor room not only has a well-defined boundary, but also has good connections and accessibility between individual buildings. The *mega-form* can be employed to generate an attractive street that links interesting spots and keeps an open end for potential development in the future. The *group form* can be applied to create a corridor linking all the green spaces. In all these examples, linkage theory is adopted to make the connection of buildings, the continuity of street frontage, or the corridor of green spaces in the physical dimension.

From the contextual point of view, physical connections are based on the degree to which the location, design, resources and arrangement of a place are reflective of the surrounding area, that is, the relationship between the site and its context (Carr, 1992, 190).

Kevin Lynch argued,

“The paths, the network of habitual or potential lines of movement through the urban complex, are the most potent means by which the whole can be ordered. The key lines should have some singular quality which marks them off from the surrounding channels: a concentration of some special use or activity along their margins, a characteristic spatial quality, a special texture of floor or façade, a particular lighting pattern, a unique set of smells or sounds, a typical detail or mode of planting... These characters should be so applied to give continuity to the path.... If positions along the line can be differentiated in some measurable way, then the

line is not only oriented, but scaled as well. For example, several checkpoints can be used to improve the definition.” (Lynch, 1960, 96)

In other words, by carefully arranging the paths and the streets, they are not only the physical connection that links the urban complex together, but they can also become places with characteristic contextual meanings.

From the ecological perspective, connection in the ecological matrix of a city or region is one important principle of sustainable design. Therefore, using multiple, different-sized ecological patches or corridors to provide ecological connections in urban space is also a part of this design criterion.

Accessibility

Dependence on the automobile has resulted in an urban environment in which highways, thoroughfares, and parking lots are the predominant types of open space, which has consequently lost much of its cultural meaning and human purpose. Rogers Trancik argues that, “In the end the desire for order and mobility has undermined the diversity and richness of urban public life”. (Trancik, 1986, 5-6) In a traffic-oriented city, it’s common to see that buildings are separated, encompassed by vast open areas without social purpose. Streets, no longer essential urban spaces for pedestrian use, function as the fastest automobile link, regardless of social cost. Neighborhoods and districts no longer interact, but became isolated, homogeneous enclaves.

The key to integrating our thinking about transportation and land use is to focus on access rather than mobility. Mobility means going faster and farther. Access means getting to more places conveniently. With access, the focus is on places. Mobility

focuses on paths, often to the neglect or even the destruction of places. The main method to achieve accessibility is to promote the use of public transportation. A city should be composed of small urban areas, which have pedestrian scale and provide good access to public transport stops within walking distance of each other.

There are similar solutions offered by urban designers working with the principles of Transit-Oriented Development. Peter Calthorpe proposes, “the metropolitan circulation framework should be layered, providing an arterial grid for auto traffic, neighborhood streets for pedestrians and slow cars, a transit system reinforced by intensified stations, and a pedestrian-dominated urban center.” (Calthorpe, 1993, 28) In this way, well-placed pedestrian paths allow for comfortable and safe access to many destinations as well as a means for integrating groups separated by age, ethnicity, or class. In other words, by providing more transportation alternatives and creating a pedestrian-friendly environment, accessibility offers the opportunity to reconnect people to people and people to their environment, physically and socially.

Identity

Environmental psychologist, Harold Proshansky defines the concept of place identity as “a substructure of self-identity that defines an individual’s personal identity in relation to the physical world through memories, ideas, feelings, attitudes, values, preferences, meanings, and conceptions about behavior relevant to the physical settings in his or her daily life” (Proshansky, 1990, 26-27).

Christian Norberg-Schulz addresses this concept in terms of “recovery of place” or respecting the *genius loci*. He emphasizes, “We should not copy the old, but determine

the identity of a place and interpret it in a new ways...Only then we may talk about a living tradition which makes change meaningful by relating it to a set of locally founded parameters.” (Norberg-Schulz, 1979, 182)

Kevin Lynch argues that, "Identity is the extent to which a person can recognize or recall a place as being distinct from other places – as having a vivid, or unique, or at least a particular, character of its own.” (Lynch, 1981, 131) He further concluded, “A good place is one which, in some way appropriate to the person and her culture, makes her aware of her community, her past, the web of life and the universe of time and space in which these are contained” (Lynch, 1981, 142).

In Summary, there are some prerequisites to shape place identity. First, the place must have some characteristics that make it remarkable and recognizable by people. These characteristics can be physical, cultural, historical, or ecological. Second, the place has to be easily accessible so people can explore it frequently and inform it with their own meanings and associations. Then there are connections between people and the place, so-called “place identity”.

Based on his research about how people perceive the image of city and develop their cognitive map about cities, Lynch found that people come to understand places through five major features of the physical landscape. Paths are the channels along which the observer customarily, occasionally, or potentially moves. Edges are the boundaries between two phases, linear breaks in continuity, lateral references rather than coordinate axes. Districts are the medium-to-large sections of the city, conceived of as having two-dimensional extent that the observer mentally enters “inside of,” and which are

recognizable as having some common, identifying character. Nodes are the strategic spots in a city into which an observer can enter; the intensive foci to and from which he is traveling, and landmarks are external references that the observer does not enter within. (Lynch, 1960, 47-48) These five major features should be used well to give a place some character that can enhance its identity.

From the ecological perspective, the connections between regional identity and the sustainability of the land are essential and fundamental. Michael Hough advocated that “The biophysical patterns of the landscape, although altered by man, also remain a dominant influence on the character of a region.” (Hough, 1990, 58) In other words, the ecological characteristics, such as the topography of a place, the indigenous plantation and wildlife, can be very powerful to develop the identity of a place.

Diversity & Mixture

The broadest possible mix of residential, commercial, social and cultural variety, promotes city vitality. Jane Jacobs proposes the ubiquitous principle is the need of cities to have an intricate and close-grained diversity of uses that give each other constant mutual support, both economically and socially. (Jacobs, 1961, 14) Moreover, as Michael Hough argues, “If health can be described as the ability to withstand stress, then diversity from an ecological perspective also implies health.” (Hough, 1994, 23) Therefore, to keep a place vivacious and healthy, diversity and mixture of a place are essential factors. They can be generated by the building mass and by the open spaces.

First, to generate exuberant diversity in a city by its building mass, Jane Jacobs argues there are four indispensable conditions.

“1. The district, and indeed as many of its internal parts as possible, must serve more than one primary function, preferably more than two.... 2. Most blocks must be short; that is, streets and opportunities to turn corners must be frequent. 3. The district must mingle buildings that vary in age and condition, including a good proportion of old ones so that they vary in the economic yield they must produce.... 4. There must be a sufficiently dense concentration of people, for whatever purposes they may be there.” (Jacobs, 1961, 150-151)

In a word, vertical or horizontal mixed-use that serves multiple functions, small blocks, buildings with various values, and highly dense population are preferable to generate diversity and consequently to make places livable and vigorous.

Second, the diversity should also be generated by open spaces. Every city is a mosaic of environments reflecting the complex interaction of natural and social forces that provide the basis for natural and cultural diversity. Michael Hough suggests an environmental parks classification for cities provides the basis for great natural and urban diversity. (Figure 5) (Hough, 1994, 111) Basically, these categories of open space range from urban wilderness where natural values predominate to highly manicured gardens and urban squares where social values have priority and large crowds can be accommodated. A city should provide as many diverse open spaces as possible, so should a district or a neighborhood.

Besides the diverse open spaces, the biodiversity of open spaces is also an important concern in urban ecology. Ann Spirn argues that size, shape, and continuity of suitable habitat are critical to maximizing the diversity and abundance of species. (Spirn, 1984, 218) One large and continuous habitat will support more species and individuals than an equal area divided into smaller, isolated patches. She recommends typographic variation should be exploited to create many microenvironments to enhance biodiversity

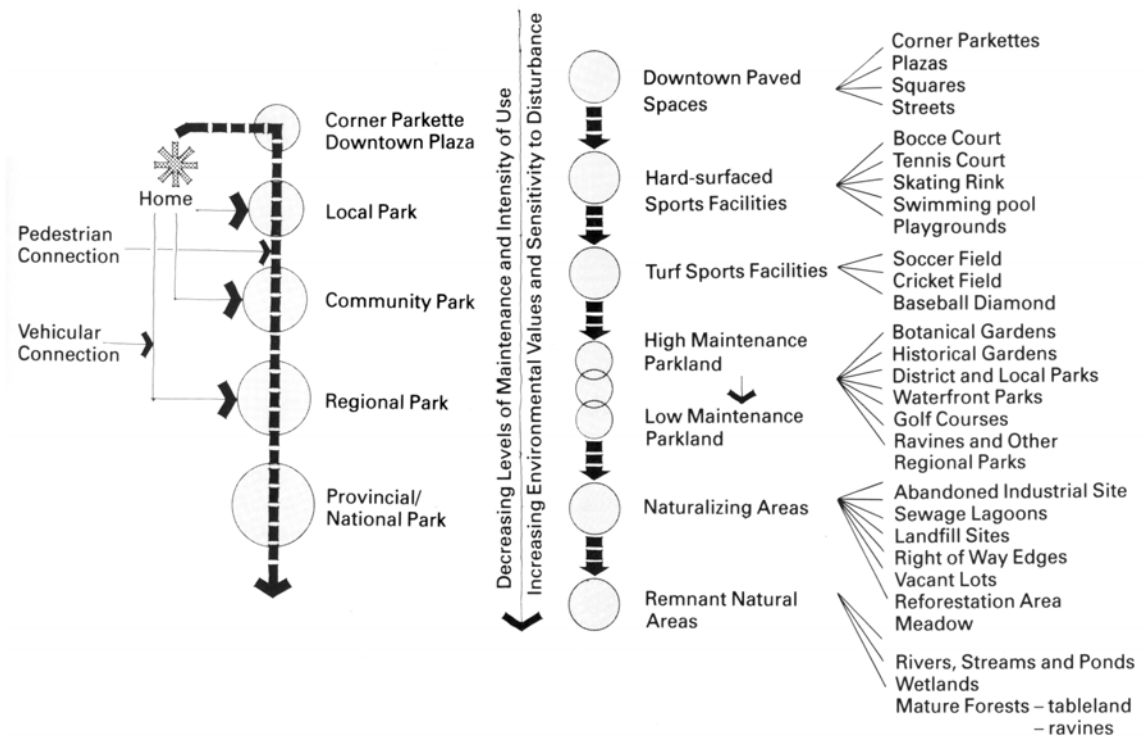


Figure 5 Michael Hough's Environmental Parks Classification.

Source: M. Hough and Suzanne Barrett. 1987. *People and City Landscapes, Toronto: Conservation Council of Ontario.*

in cities. (Spirn, 1984, 222-223) By doing so, a place is a livable habitat for people and other creatures.

Multi-functionality

To achieve an integration of human and natural processes at a fundamental level, urban cities call for a multi-functional design approach. To make the city environmentally and socially healthier, every square foot of urban land should not only satisfy human needs, such as habitation, economic activities, recreation and education, but also serve according to its capabilities, as a producer of food and energy, a moderator of micro-climate, and a conserver of water, plants, and animals.

The mixed use of building mass, both horizontal and vertical, generates the diversity of a place in a city. From the ecological point of view, it also serves more functions on the same area of ground. Similarly, the voids in cities can be public spaces for people's social needs and, meanwhile, they can have a couple of other functions. First, they can be an essential factor in re-establishing a hydrological balance (Hough, 1994, 80-81). Temporary storage is useful in situations where various functions must be accommodated in the same area. They can be designed to accumulate water during rainstorms and drain completely after the storm over a period of time. The land thus serves dual purposes: assisting hydrological functions, but still providing space for urban uses (Spirn, 1984, 79).

Second, if connected by corridors of sufficient size and plant cover, the city's open space system will support a greater diversity of life, with a greater proportion of "desirable" wildlife species (Spirn, 1984, 250). Transmission lines, railway rights of way, canals and highways have considerable potential for alternative functions. They can be given environmental and social value as corridors for the migration of plants, wildlife, as well as people.

Third, the city's open space system is also compatible with many other urban functions like sewage treatment, climate modification, air quality management, erosion prevention, forestry, and recreation. Even if only for recreational functions, an urban place should be designed as flexibly as possible to serve for multiple activities (Table 1). If both the voids and the solids in a city are designed in such an integrated approach,

Legend	ACTIVITY/OPEN SPACE MATRIX													
	POSSIBLE PLACES													
	Area	Way	Plaza	Community Park	Sports Field	Sports Court	School Yard	Skating Rink	Urban promenade/retail	Residential Street	Totipot	Wading Pool	Courtyard	Rooftop
	Area	Way	Plaza	Community Park	Sports Field	Sports Court	School Yard	Skating Rink	Urban promenade/retail	Residential Street	Totipot	Wading Pool	Courtyard	Rooftop
Possible Activities														
Enjoy Nature/Education	●	●	□	■	□	□	●	□	□	□	□	□	■	□
Respite from city	●	●	■	■	□	□	■	□	□	□	□	□	■	●
Unstructured play	●	●	■	●	■	■	●	■	■	●	●	●	■	■
Walk	●	●	●	■	■	□	□	□	□	●	□	□	□	□
Bicycle/adult, teen	■	●	□	■	□	□	□	□	●	●	□	□	□	□
Bicycle/children	■	■	■	●	■	●	●	■	■	●	●	●	■	□
Jog	■	□	■	●	■	□	□	□	□	●	□	□	□	□
Walk a dog	●	●	■	●	●	□	□	□	■	□	□	□	●	□
Picnic/BBO	●	□	□	●	■	□	□	□	□	□	□	□	●	●
Sunbathe	□	□	□	●	●	●	■	□	□	□	■	●	●	●
Socialize/hang-out	■	□	●	●	●	●	●	●	●	●	●	●	●	■
Be alone	■	●	□	■	□	□	□	□	□	□	□	□	□	●
Garden: veg/flowers	□	□	□	■	□	□	■	□	□	■	□	□	●	●
Toboggan	●	□	□	●	□	□	□	□	□	□	□	□	□	□
Skate	□	□	■	●	●	■	■	●	□	□	□	●	■	□
Tennis	□	□	□	■	□	●	■	■	□	□	□	□	□	□
Basketball	□	□	□	●	□	□	■	□	□	□	□	□	□	□
Baseball/soccer	□	□	□	□	●	□	■	□	□	□	□	□	□	□
Horseshoes	□	□	■	●	■	□	●	□	□	□	□	□	■	□
Skateboard	□	□	■	□	□	□	■	■	■	●	□	□	■	□
Street hockey	□	□	□	■	□	□	●	■	□	□	□	□	■	□
Festival	□	□	●	●	■	□	■	□	■	●	□	□	□	□
Outdoor theatre/concert	□	□	●	□	■	□	□	□	□	□	□	□	□	□
Window shopping	□	□	□	□	□	□	□	□	●	□	□	□	□	□
Workday lunch	■	■	●	●	□	□	□	□	●	■	□	□	□	□
Table games	□	□	●	●	□	□	■	□	●	●	□	□	■	●
People watching	□	□	●	●	●	●	■	■	●	●	●	●	■	■
Sidewalk performance	□	□	●	■	□	□	□	□	●	●	□	□	□	□
Car repairs	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Frisbee/ball	■	■	□	●	●	□	●	■	□	●	■	□	■	□
Swing, slide, climb	□	□	■	●	□	■	●	□	■	■	●	□	●	■
Play tag	■	■	■	●	■	□	□	■	■	●	■	■	●	□
Play in water	□	□	□	●	□	□	■	■	□	■	●	●	●	■
Play in sand	□	□	□	●	□	□	●	□	□	■	●	□	●	■

Table 1 Activity and Open Space Matrix

Source: Hough, Michael. 1995. *Cities and Natural Processes*. London: Routledge, Inc. 142.

urban places can be more healthy and balanced environments. People living in a city can also have a closer relationship with nature.

Summary

From the above discussion, it's obvious there are reciprocal relationships between all these design criteria (Table 2). Achieving one can certainly promote some of the others. Urban design is a dynamic process to integrate all of criteria in the physical, contextual, and ecological dimensions. These design criteria guide both the analysis of design precedents and the design project in the following sections.

	Legend: ☆ = high ◇ = medium	Dimensions			Design Criteria					
		Physical	Contextual	Ecological	Figure-ground Clarity	Connection, Continuity & Corridor	Accessibility	Identity	Diversity & Mixture	Multi-function
Dimensions	Physical Dimension									
	Contextual Dimension	☆								
	Ecological Dimension	☆	☆							
Design Criteria	Figure-ground Clarity	☆	◇	◇						
	Connection, Continuity & Corridor	☆	☆	☆	☆					
	Accessibility	☆	☆	☆	☆	☆				
	Identity	◇	☆	◇	☆	☆	◇			
	Diversity & Mixture	◇	☆	☆	◇	☆	☆	☆		
	Multi-function	◇	◇	☆	◇	☆	◇	◇	☆	

Table 2 Design Dimensions and Design Criteria Matrix

Multiple Scales

On any scale, small or large, a place can be read in physical, contextual, and ecological dimensions. Therefore, all these design criteria should apply on any scale. In the physical dimension, figure-ground clarity and connection are the design principles to weave the continuity of urban form from broader scales to small scales, and vice versa. From the contextual perspective, identity and sense of place are based on personal interpretations of places. The identity of a place on any scale is a nested set of knowledge that contributes to building the sense of place at the next higher scale (Nugent, 1985, 54-55). Accessibility should penetrate at every level so that people can easily shift their readings of a place from one scale to another. If each place is designed to enhance its uniqueness and identity, then the diversity and mixture of a place at broader

scales can be achieved as well. From the ecological point of view, every place is a piece of a mosaic and is a part of the whole eco-system. Only if a place is treated as a habitat with multiple functions and bio-diversity on all scales, can the sustainability of the whole eco-system become possible.

In this thesis, urban fabric is read from three hierarchical scales: city/district, neighborhood, and intimate scales. The design precedents are selected and analyzed according to the design criteria. All the criteria will also be applied to reconnect the urban fabric of the Atlanta Civic Center in the design project.

CHAPTER 4 PRECEDENTS OF URBAN DESIGN

In this thesis, four precedents with different scales are studied in order to analyze how the design criteria can be integrated in urban design. In addition to their scales, they are chosen for their successes in dealing with different issues. The Emerald Necklace is the first greenbelt in American urban cities, which shows how a green corridor can blend into a city, change the city image, and meanwhile serve multiple functions. The Central Artery/ Tunnel and Central Corridor projects give a good solution to the conflict between vehicles and pedestrians. They also illustrate how the urban fabric once broken by the highway system can be reconnected from downtown to the harbor of Boston. The North End Neighborhood demonstrates the importance of figure-ground clarity to give a neighborhood a unique image and to create a friendly pedestrian network that connects people to people, and people to the place. It also proves the critical role of diversity and mixture in making a vibrant and safe neighborhood. The Park at Post Office Square presents that even a small piece of underused land can shape a new identity to a place and activate a series of changes to reweave the urban fabric. All of these will become the inspiration for the design projects in Atlanta.

Emerald Necklace Greenway, Boston

Few cities have undergone such drastic changes in geography as Boston (Figure 6 & 7). Starting as early as 1742, the city began to fill in the shallows near the shore. By the 1820s and into the 1830s, hilltops were being scraped and used as landfill. By 1860, the Back Bay, which had been an environmental concern for decades due to sewage dumping, had been filled in. In 1870, the city was an overcrowded, noisy, and dirty place because of its rapidly expanding population. In 1875, the Boston City Council passed a Park Act to help solve the problem and invited Frederick Law Olmsted to plan a park system for the city that would provide residents with an opportunity to enjoy the benefits of nature. (National Park Service, <http://www.cr.nps.gov/nr/twhp/wwwlps/lessons/86bostonparks/86bostonparks.htm>) Such a system suited the geography of Boston as well as allowing easier access to nature than one large central park.

In Olmsted's plan (Figure 8), new parks were planned to connect with the existing Boston Common, Public Garden, and Commonwealth Avenue. In areas where space was too limited for parks, the plan called for parkways, roadways that were widened and planted with overhanging trees. In his report to the Board of Commissioners in 1881, Olmsted called his chain of parks the "Green Ribbon" (Olmsted, 1997, 221). Over the years, it became known as the "Emerald Necklace" (Figure 9).

Olmsted was first hired by Boston in 1877 to clean up a marsh known as the Back Bay, which had been used as a sewer for decades. He turned the old sewage dumping ground into the beautiful marshland it had once been. At the same time, he also became involved in establishing and maintaining the Arnold Arboretum. The arboretum became

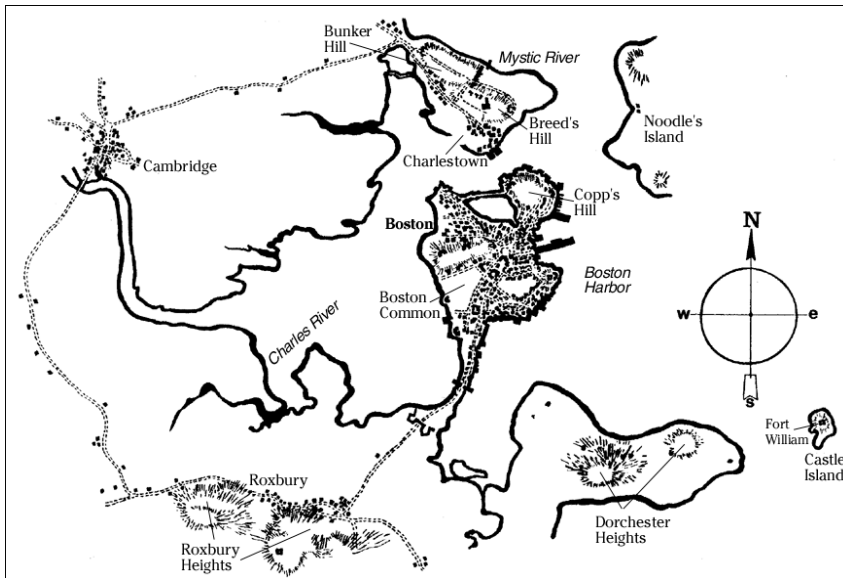


Figure 6 Boston, 1775.

Source: National Park Service.

<http://www.cr.nps.gov/nr/twhp/wwwlps/lessons/86bostonparks/86locate1.htm>

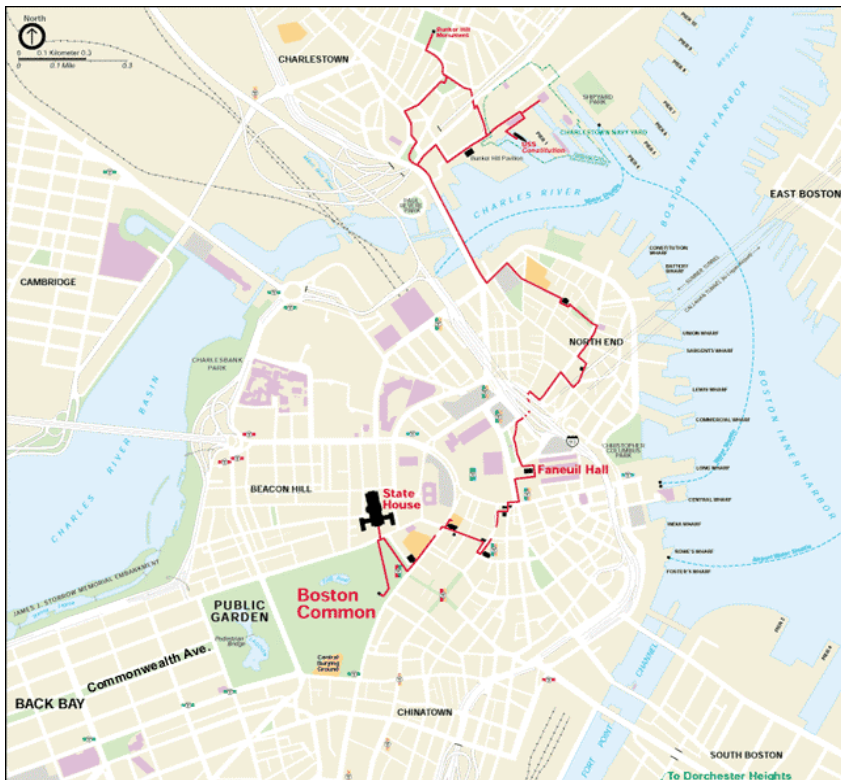


Figure 7 Boston, 2002.

Source: National Park Service.

<http://www.cr.nps.gov/nr/twhp/wwwlps/lessons/86bostonparks/86locate1.htm>



Figure 8 Plan of the park system from the Common to Franklin Park, 1894.

Source: Zaitzevsky, Cynthia. 1982. *Frederick Law Olmsted and the Boston Park System*. Cambridge, Mass: Harvard University Press. 5.



Figure 9 The Emerald Necklace, 2002

Source: <http://www.cr.nps.gov/nr/twhp/wwwlps/lessons/86bostonparks/86images/86draw1ch.jpg>

a part of the growing Boston Park System under an agreement that was signed between Harvard University and the City of Boston in 1882 (Zaitzevsky, Cynthia, 1982, 63). By this agreement, the city purchased the arboretum grounds from Harvard University and leased them back to Harvard for a dollar a year for a thousand years. Harvard gained a professionally designed arboretum, and Boston gained a 265-acre park.

The third project of the Boston Park System was Franklin Park, which was originally called West Roxbury Park. Olmsted set aside a large section of the park, a mile long and three quarters of a mile wide, which he designated the “Country Park”. He proposed that this should be a place for a quiet enjoyment of the natural scenery ([http:// www. fredericklawolmsted.com/Bostonframe.htm](http://www.fredericklawolmsted.com/Bostonframe.htm)).

In 1880, Olmsted suggested to the Parks Commission that the Muddy River be included in the plan for the Emerald Necklace to connect the Back Bay Fens with Jamaica Pond (<http://www.cr.nps.gov/nr/twhp/wwwlps/lessons/86bostonparks/86facts3.htm>). The little stream was brackish (a mixture of salt and fresh water), a source of disease, and a breeding ground for mosquitoes. Sensitive to the landscape, he blended man-made portions with natural water and land formations. The river was reshaped into a curving stream with lush foliage and small ponds. With Boston’s ample rain, the stagnant waterway became a corridor of green, the Riverway (Figure 10 & 11). The area that includes Leverett Pond, Willow Pond, and Ward’s Pond was singled out and called Leverett Park. In 1900, the name was changed to Olmsted Park to honor its designer ([http://www.cr.nps.gov/nr/twhp/wwwlps/ lessons/86bostonparks/ 86facts3.htm](http://www.cr.nps.gov/nr/twhp/wwwlps/lessons/86bostonparks/86facts3.htm)). Next to Olmsted Park, Jamaica Pond was the only large freshwater pond in the city, and it



Figure 10 The Muddy River (Riverway) during construction, 1892

Source: National Park Service, Frederick Law Olmsted National Historic Site.
<http://www.cr.nps.gov/nr/twhp/wwwlps/lessons/86bostonparks/86visual4.htm>

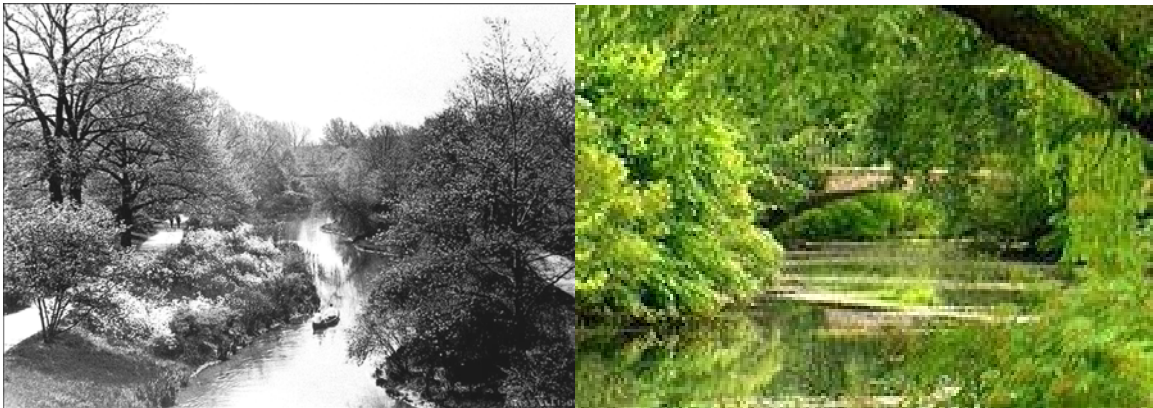


Figure 11 The Muddy River (Riverway) after construction, 1920 & 2002

Source 1: National Park Service, Frederick Law Olmsted National Historic Site (<http://www.cr.nps.gov/nr/twhp/wwwlps/lessons/86bostonparks/86visual4.htm>)

Source 2: Home & Garden Television site (http://www.hgtv.com/HGTV/project/0,1158,GALA_project_28364,00.html)

was a logical place for a park. In 1892, Olmsted prepared a simple configuration for the park that would encompass Jamaica Pond. He left the overall area alone, just added some more vegetation and proposed a boathouse. The main aspect of the pond was to form a link to the rest of the necklace (<http://www.fredericklawolmsted.com/> Boston

frame.htm). Integrated with the existing open green spaces in the city, the whole chain of parks took over 20 years to complete. Olmsted had succeeded in encircling Boston with a living invigorating “green ribbon”.

Connection, Continuity and Corridor

When the Emerald Necklace was completed, a Bostonian could walk down from the State House through the Boston Common and the Public Garden, up Commonwealth Avenue, around the Back Bay Fens and along the Riverway, past Olmsted Park and Jamaica Ponds, through rows of trees along the Arborway, to the Arnold Arboretum and Franklin Park. This string of parks, connected by a waterway, became the first greenbelt for an American city. It remains a model for designing a greenway as part of the urban fabric.

Accessibility

In Olmsted’s Park System plan, one of the major concerns is for all city dwellers to have contact with the natural world. He envisioned a linked chain of parks as more beneficial than a large single park because the linked parks together will fill a need for the entire city, not just the neighborhoods closest to a large, central park. In other words, accessibility was one of the design principles in developing the Emerald Necklace. The more people have easy access to the parks, the more successful the Emerald Necklace is to serve as a public space in the city.

Identity

Without doubt, the Emerald Necklace did change the identity of Boston. Olmsted turned the foul smelling Back Bay tidal marsh into the beautiful marshland it had once

been. Instead of conforming to the Bostonians' hoping to bury the stagnant Muddy River underground, he reclaimed it and sculpted the land around into a gently winding stream. At that time, the Emerald Necklace was unrivaled anywhere in the United States. The former Massachusetts governor Michael Dukakis described it in recent years, "Look, having a public park was unusual, but having a belt of green around a city was unheard of." (http://www.hgtv.com/HGTV/project/0,1158,GALA_project_28364,00.html) It not only represented a bold new vision from the designer, but also reshaped the image of the city.

Diversity

Size, shape, and continuity of suitable habitat are critical to maximizing the diversity and abundance of species (Spirn, 1984, 218). The linked chain of parks created one large and continuous habitat that would support more species and individuals than an equal area divided into smaller, isolated patches. Besides, Olmsted restored the filthy Back Bay Fens, where even eels and clams could no longer survive, to its original salt marsh condition. The sheer quantity and diversity of vegetation planted was impressive: more than 100,000 shrubs, vines, and flowers in one area of two-and-a-half acres (Zaitzevsky, 1982, 188). The Arnold Arboretum with nearly 15,000 trees and plants (<http://www.hgtv.com/HGTV/project/>) and nearby Jamaica Pond, a park with the purest body of water also enhanced the diversity of the Park System as natural habitats. Overall, the Emerald Necklace provides a series of diverse habitats in an urban landscape.

Multi-functionality

The Emerald Necklace was designed to serve multiple functions. First, it improved the health and welfare of contemporary and future residents in Boston. Second, it has become part of the identity of the city. Third, this “Green Ribbon” is not only a park system where people can find the city is far away from them, but also a chain of habitats for plants and wildlife in Boston. Moreover, both the Back Bay Fens and the Riverway are a natural floodplain penetrating the city. The system was also designed as a flood control and water quality project (Spirn, 1984, 147).

Central Artery/Tunnel and Central Artery Corridor, Boston

In Boston, the elevated six-lane highway called the Central Artery is a world-class traffic problem. It only carried about 75,000 vehicles a day when it opened in 1959. Today it carries upwards of 200,000, making it one of the most congested highways in the United States. If there is no major improvement, Boston can expect a stop-and-go traffic jam for up to 16 hours a day – every waking hour – by 2010 (<http://www.bigdig.com>).

Besides, the Central Artery is also a linear barrier between the downtown and the Waterfront along its entire length. It cuts off the North End and Waterfront neighborhoods from the downtown, limiting these areas’ ability to participate in the city’s economic life (Figure 12).

The solution for these problems is called the Central Artery/ Tunnel Project, which has been under construction since late 1991. In this project, the six-lane elevated



Figure 12 The Central Artery in the Downtown Core, Boston.

Source: Massachusetts Turnpike Authority. 2001. Boston Central Artery Corridor Master Plan - Urban Issues Analysis Report. 10.

highway will be replaced with an eight-to-ten-lane underground expressway directly beneath the existing road (Figure 13). The ugly green elevated highway will be gone, replaced by 27 acres of new open space called the Central Artery Corridor (Figure 14) ([http://www. bigdig.com](http://www.bigdig.com)). The state has committed to maintaining a minimum of 75% of the land of the Corridor for publicly accessible open spaces and related recreational facilities. Up to 1.5 million square feet of new commercial, residential and civic uses will also be permitted on the development parcels. (Massachusetts Turnpike Authority, 2001, 7)



Figure 13 A Cross-section Perspective Model.

Source: <http://www.bigdig.com/thtml/future10.htm>.



Figure 14 The Central Artery Corridor Sitemap.

Source: Massachusetts Turnpike Authority. 2001. Boston Central Artery Corridor Master Plan - Urban Issues Analysis Report. 11.

The *Urban Issues Analysis Report* (Massachusetts Turnpike Authority, 2001) was prepared as a first step to produce a Master Plan and Concept Design for the final surface restoration of the Central Artery Corridor. Although the final development plans for the new surface parcels above the highway tunnel are still in the works, this project shows a great opportunity to reconnect Boston's urban fabric physically, contextually, and ecologically.

Figure-ground Clarity

From the figure-ground map (Figure 15), it is obvious how dramatically the elevated highway affected Boston's urban form. The construction of the highway slashed an ugly scar through the dense building fabric, especially the contiguous and consistent built form as the Downtown section approaches the North End and Waterfront. Many buildings adjacent to the structure were designed with a blank side to the Artery. By replacing the highway structure with the Corridor, new "urban rooms" can be created by the careful placement and design of new structures as related to the pattern, scale and character of existing buildings (Figure 16). The Corridor will serve as a catalyst to encourage the surrounding buildings to face it and offer inviting frontages with activity and visual delight, front doors and transparency, and edges that promote interest and interaction.

Connection, Continuity and Corridor

Boston is often described as a city of neighborhoods, each with its own identity, history, and culture, and all reflecting the social and architectural history of the city. The Corridor offers opportunities for redefining neighborhoods within a renewed historic



Figure 15 Figure-ground Map of the Central Artery.

Source: Massachusetts Turnpike Authority. 2001. Boston Central Artery Corridor Master Plan - Urban Issues Analysis Report. 60.

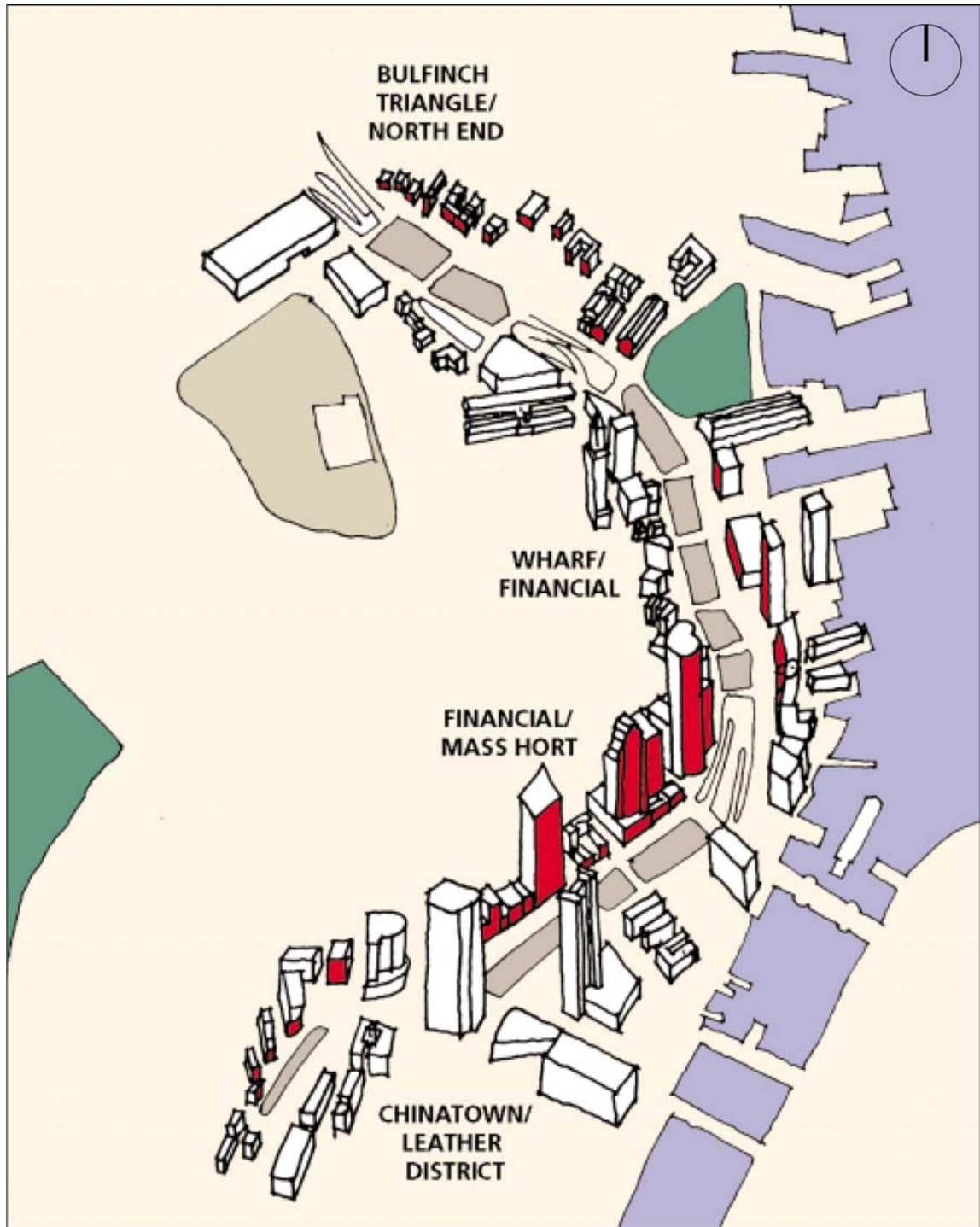


Figure 16 The Central Artery Corridor Is Composed of Multiple Urban Rooms.

Source: Massachusetts Turnpike Authority. 2001. Boston Central Artery Corridor Master Plan - Urban Issues Analysis Report. 64.

context, for reconnecting districts and neighborhoods, and for creating new connections between new and emerging uses and districts. Especially, the North End that was once isolated by the elevated highway can reconnect to the Downtown. The Corridor also provides a number of links to bridge the Downtown to the Harbor historically, visually, and programmatically (Figure 17).

Accessibility

Long regarded as "America's most walkable city", Boston has a dense, fine-grained pattern of blocks and streets with variety and interest in ground floor uses, and narrow undulating streets which are moderately well protected from wind and for the most part washed in sunlight for portions of the day. The Corridor will enhance Boston's "walkable" character by giving a new and permeable aspect to the city.

There are over 600,000 people (workers, tourists, and residents) coming into and out of downtown Boston everyday, most of whom are within a 5-minute walk of the Corridor (Figure 18) (Massachusetts Turnpike Authority, 2001, 30). At some point in their day, they become pedestrians. The Corridor will provide revealed and reinforced pedestrian accessibility to the bordering districts that are recognized as interesting and inviting walking environments. The existing and planned transit stations and trolley routes in the area will also be improved and connected within the enhanced pedestrian environment (Figure 19).

Identity

The removal of the Artery will reveal a number of visual landmarks, vertical elements, and view corridors, some long hidden and some new. These visual clues will



Figure 17 The Central Artery Corridor Connects the Downtown to the Harbor.

Source: Massachusetts Turnpike Authority. 2001. Boston Central Artery Corridor Master Plan - Urban Issues Analysis Report. 53.



Figure 18 The Central Artery Corridor Connects the Surrounding Districts.

Source: Massachusetts Turnpike Authority. 2001. Boston Central Artery Corridor Master Plan - Urban Issues Analysis Report. 32.

highlight paths and directions that will orient visitors and residents (Figure 20). All these view corridors and visual landmarks, coupled with the Corridor itself as a visual landmark, its interactive edges and intersectional nodes, will all contribute to shaping the identity of the city.

Diversity

The old Artery generally separates the land uses of the adjacent districts. For example, the commercial uses in the Financial District are separated from the mixed use Wharf District and from the residential North End. With the removal of the Artery, the Corridor will serve as a seam that brings diverse neighborhoods together and attracts a variety of user groups with activities for multiple uses and multiple seasons.

Multi-functionality

Overall, the Central Artery/Tunnel combined with the Central Artery Corridor will improve the mobility in notoriously congested downtown Boston. It will also achieve multiple functions. Physically, it is conceived to reconnect neighborhoods severed by the old elevated highway and to reweave the broken urban fabric. Contextually, the parcels of the Corridor can create coherent visual cues, nodes, and landmarks that will enhance the identity of the city. Ecologically, carbon monoxide levels in Boston's air will be reduced an estimated 12 percent because traffic will be moving rather than standing still on a gridlocked highway (<http://www.bigdig.com/thtml/summary.htm>). When the entire project is finished in 2004 (<http://www.bigdig.com/thtml/summary.htm>), the quality of life in downtown Boston will improve dramatically.



Figure 19 Pedestrian Accessibility

Source: Massachusetts Turnpike Authority. 2001. Boston Central Artery Corridor Master Plan - Urban Issues Analysis Report. 36.



Figure 20 View Corridor and Visual Landmarks.

Source: Massachusetts Turnpike Authority. 2001. Boston Central Artery Corridor Master Plan - Urban Issues Analysis Report. 68.

The North End Neighborhood, Boston

The North End (Figure 21) is known primarily for two things – it is Boston’s oldest neighborhood and the center of Italian culture in New England (<http://www.urbanphoto.org/boston/northend/>). Home to Paul Revere's house, the Old North Church, and the Copp's Hilly Burying Ground, the neighborhood was built—and continues to thrive—on history and tradition.

The North End became home to succeeding waves of immigrants during the 19th century, the last of which came from Italy, leaving an indelible and charming mark on the neighborhood. (<http://www.cityofboston.gov/bra/Neighborhoods.asp?action=ViewHood&HoodID=14>) In the summertime, the North End is filled with the sounds and smells of feast days. With a number of authentic Italian restaurants, pastry shops, cafes, and small retail stores, the area is aptly referred to as Boston’s own “Little Italy.” (<http://www.cityofboston.gov/bra/Neighborhoods.asp?action=ViewHood&HoodID=14>)

Figure-ground clarity

The North End retains its 1630’s web of narrow streets and—despite the ensuing landfill—proximity to harbor side wharves (<http://www.northendweb.com>). This original 17th-century street layout with a tightly knit building mass can be read very well in the figure-ground map of the North End (Figure 22). The multiple-story buildings house a highly dense population. They also provide physically continuous and well-defined edges for the streets (Figure 23 & 24). With such an enclosed character,



Figure 21 North End Neighborhood, Boston

Source: http://www.mapjunction.com/places/Boston_BRA/rest.pl?t=11943&p=28791

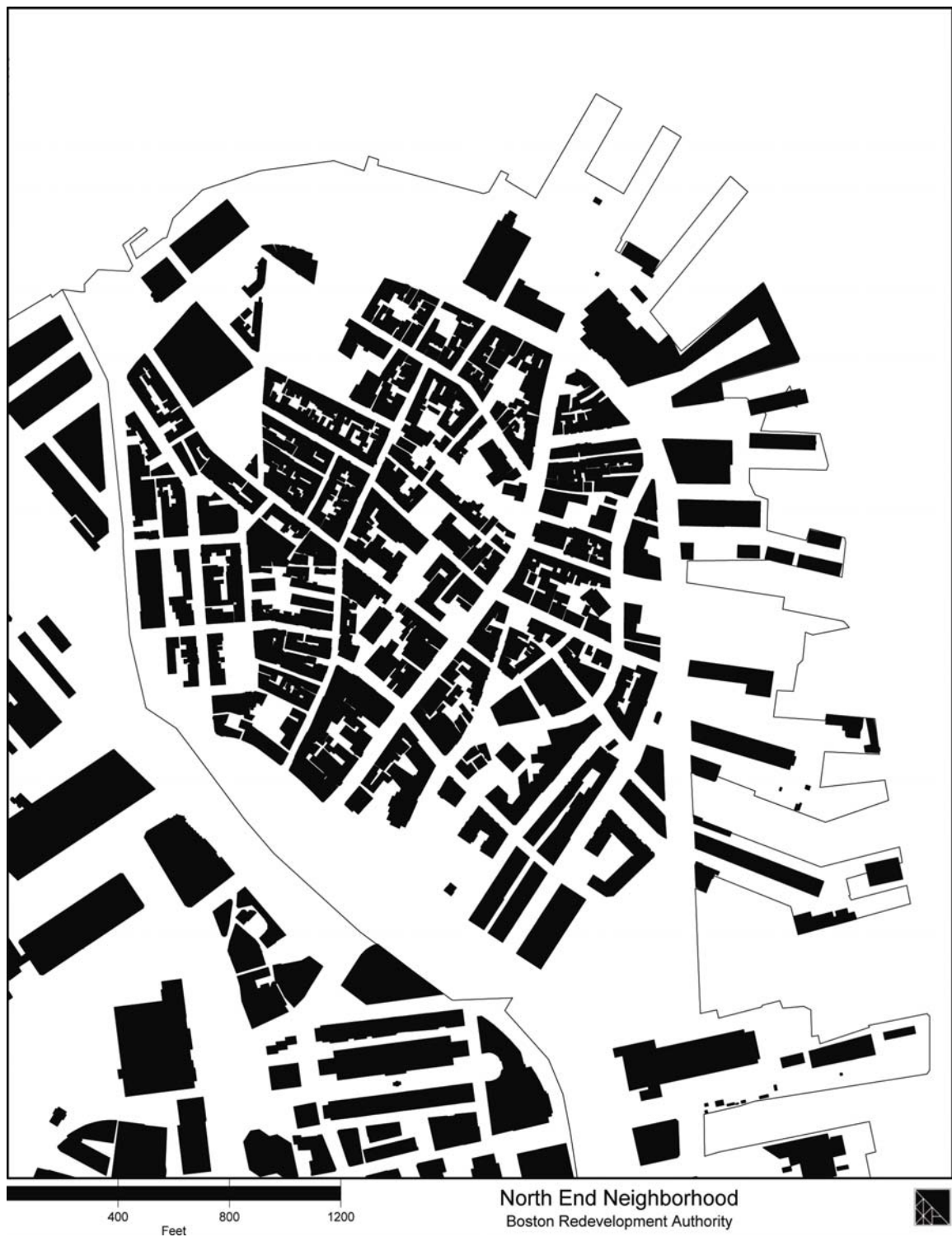


Figure 22 Figure-ground map of North End

Source: http://www.mapjunction.com/places/Boston_BRA/rest.pl?t=11943&p=28808



Figure 23 The serpentine and colorful Prince Street

Source: <http://www.urbanphoto.org/boston/northend/>



Figure 24 The narrow, winding Salem Street with well-defined edges

Source: <http://www.urbanphoto.org/boston/northend/>

the narrow, winding streets become the outdoor rooms in the North End and add to the neighborhood's old-world feel as well.

In the North End, the building mass not only frames the streets but also embraces the open spaces, such as the Paul Revere Mall, the Polcari Park, the Cutillo Park, and the North Square. There are even some tiny courtyards hidden among the tightly clustered blocks in North End (Figure 25 & 26). The clarity of figure-ground relationship gives the North End neighborhood a unique, physical sense.

Connection, continuity & corridor

The highly dense building mass gives the North End neighborhood an opportunity to create a diverse yet continuous frontage. In addition, the connections between the narrow, winding streets form a network penetrating the whole neighborhood (Figure 27). This street network brings all the parts of the neighborhood together and also makes North End become the Boston neighborhood most connected to the harbor (<http://www.urbanphoto.org/boston/northend/>).

Accessibility

Instead of super-blocks, or even decently large blocks, the North End neighborhood has very small blocks. The small blocks combined with the street network create easy accessibility in the one-square-mile North End. The narrow character of the streets reduces the speed of cars and generates a pedestrian-friendly environment. Different people use the busy sidewalks of the neighborhood at various times (Figure 28 & 29).



Figure 25 A passageway to a North End courtyard

Source: <http://www.urbanphoto.org/boston/northend/>



Figure 26 A North End courtyard hidden in the small

Source: <http://www.urbanphoto.org/boston/northend/>



Figure 27 Street network of North End

Source: http://www.mapjunction.com/places/Boston_BRA/rest.pl?t=11943&p=28320



Figure 28 Busy Hanover St. sidewalks

Source: <http://www.urbanphoto.org/boston/northend/>



Figure 29 Bustling Prince St. looking towards the Church of the Holy Scepture

Source: <http://www.urbanphoto.org/boston/northend/>

Identity

According to her personal experience, Erla Zwingle, a National Geographic Magazine writer, wrote, “The North End is still a place where people can do spontaneous things...This is something very North End.” She concluded, “I think it is because the North End still has that village ethos.” (<http://www.nationalgeographic.com/ngm/0010/feature3/assignment1.html>) From an outsider’s perspective, the sense of place is perceived sharply and vividly in the North End neighborhood.

Because people of every race and background heavily and constantly use the streets of the North End, the streets afford no opportunity for street crime or vandalism. As a result, the North End neighborhood gains its identity as Boston’s safest and most livable neighborhood where people look out for people (<http://www.northendboston.com/livingFrame-7.html>).

The identity of North End comes also partly from its historical landmarks, such as the Old North Church (Figure 30). They enrich the distinctiveness of the North End by telling people the stories of the neighborhood. Similarly, the precious public spaces enhance the collective image of the North End. For example, the Pall Revere Mall, also called the Prado (Figure 31), has been the heart of the neighborhood, physically and emotionally.

In a word, the people, the narrow streets, the historical landmarks, the close-grained diversity of uses (discussed at the next paragraph), and the cumulated cultural assets contribute to shaping the identity of the North End as Boston's own "Little Italy."



Figure 30 Steeple of the Old North Church seen from Hull Street

Source: <http://www.urbanphoto.org/boston/northend/>

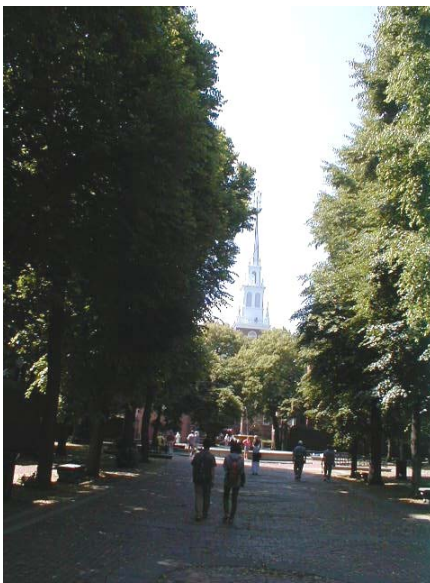


Figure 31 In the Prado, looking towards the Old North Church and St. Stephen

Source: <http://www.urbanphoto.org/boston/northend/>

Diversity & mixture

The North End has all kinds of working places and commerce mingled in the greatest complexity with its residences (Figure 32). Moderate scale walk-up apartments and townhouses characterize the neighborhood. Many of the residential buildings have mixed use with the ground-floor retail (Figure 33 & 34). Jane Jacobs (1961, 14) argued that the intricate and close-grained diversity of uses is the ubiquitous principle for keeping a place alive. In North End, this principle simply speaks for itself.

Multi-functionality

The crucial factor that keeps North End bustling is its multi-functioning streets. The streets of North End are not only paths, but also places that create a network strongly connecting the whole neighborhood together. They are social spaces where the elderly can sit and chat. They are playgrounds where children play after supper. They are also urban adventure trails where tourists stroll and explore the neighborhood's history and uniqueness. During the summer, the streets become the places of weekend festivals in honor of a patron saint. The busy streets of the neighborhood serve diverse functions and really tie people with people, as well as people with the place.

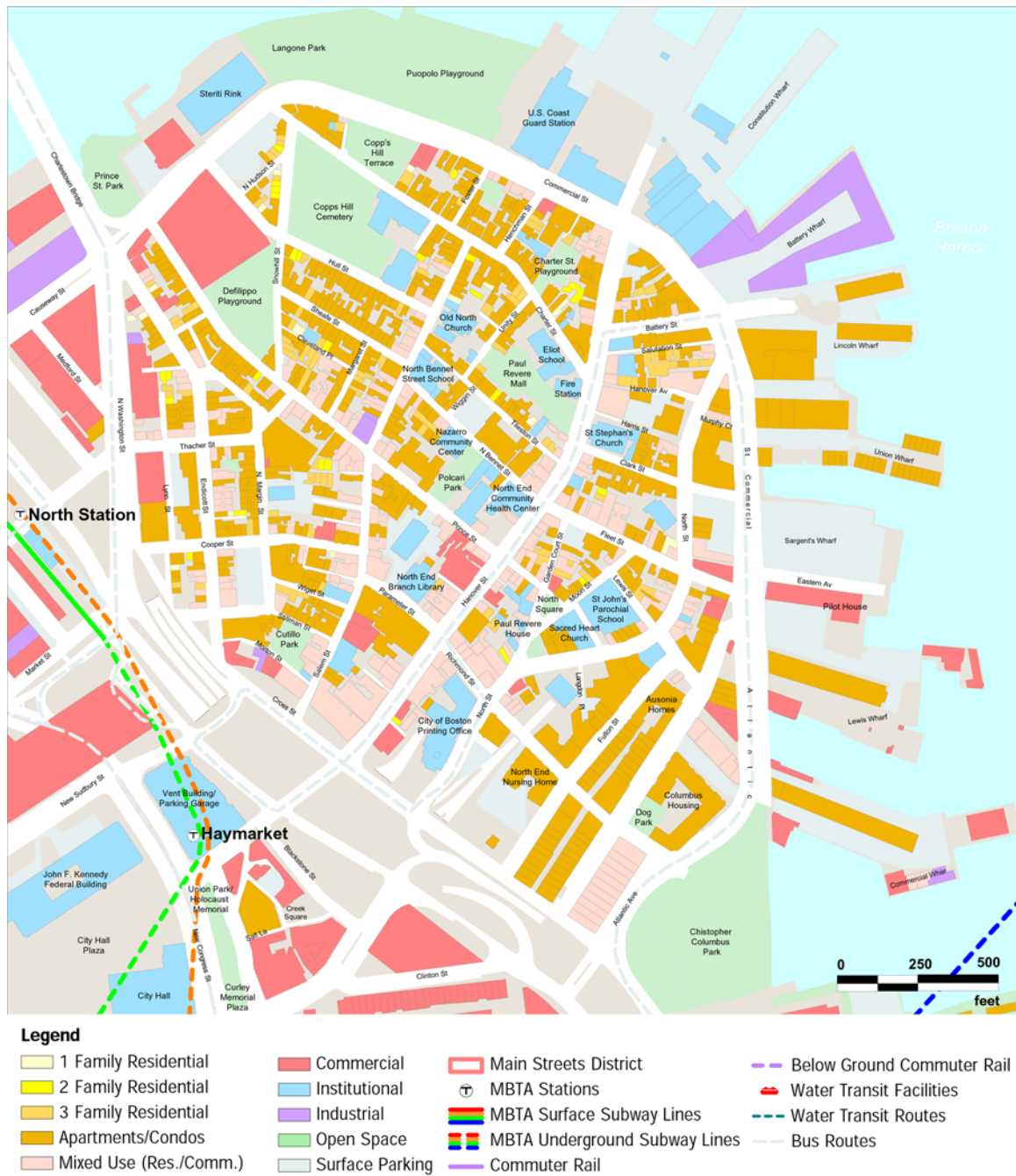


Figure 32 Land Use Map of North End

Source: Boston Redevelopment Authority (<http://www.cityofboston.gov/bra/pdf/maps/northend.pdf>)

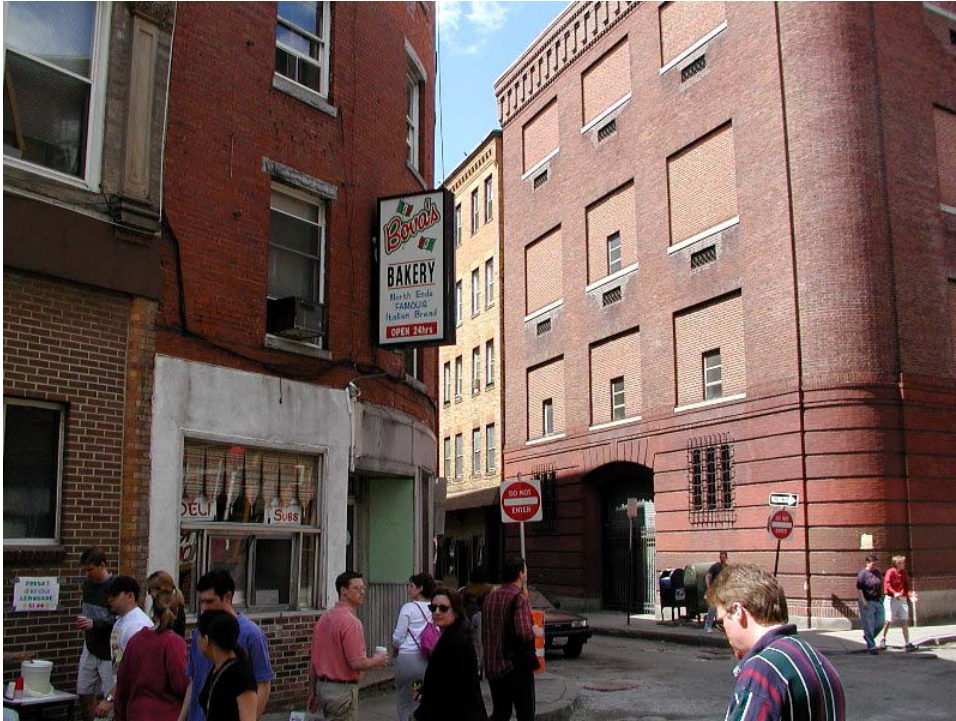


Figure 33 Mixed use – Bova's Bakery at Salem St. & Prince St.

Source: <http://www.urbanphoto.org/boston/northend/>



Figure 34 Mixed use – an unmarked corner store and some typical residents

Source: <http://www.urbanphoto.org/boston/northend/>

The Park at Post Office Square, Boston

For many years, Boston's Financial District was dominated by an aging and unsightly parking structure in the center of Post Office Square (Figure 35). In 1983, a group of Boston business and civic leaders formed Friends of Post Office Square and developed a plan to replace the decrepit parking structure with a combination public park and underground parking facility (Figure 36). A public-private partnership financed the design and construction of the park and garage, while fees from the garage are targeted to repay capital costs and ongoing maintenance (http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/abstract/index.html).

Figure-ground Clarity

By removing the old garage structure, a magnificent urban space was revealed. Surrounded on all sides by streets, the new park's real spatial bounds are the solid street walls formed by many notable buildings surrounding Post Office Square. The building mass defines the new park as an outdoor "urban room". In design details, some black fences and shrubs along the perimeter of the park also serve as short walls that enclose the space creating a sense of intimacy (http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/supplementary/news/page1.html) (Figure 37).

Accessibility

People who once avoided this area now go out of their way to use the park and its amenities as well as the garage below. It has radically transformed the use and circulation patterns in the financial district. Robert Campbell, the architecture critic of *Boston Globe*, wrote that the parking relocated all but invisibly underground, is generous



Figure 35 Old Post Office Garage

Source: http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/photos/page1.html

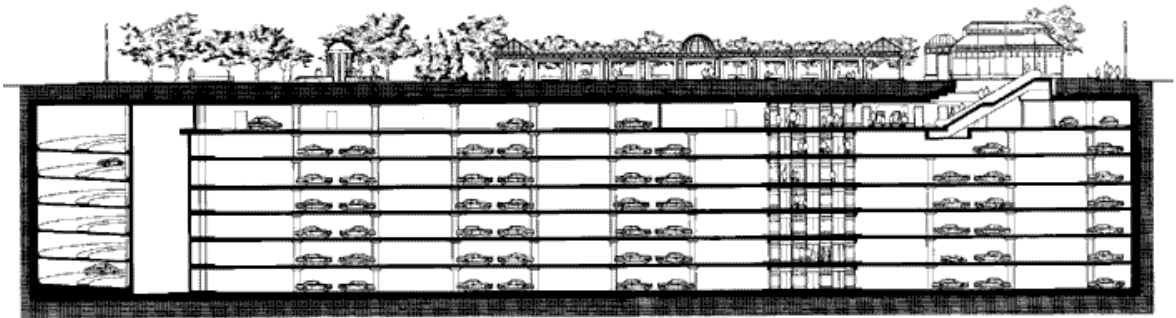


Figure 36 Park Structure and Underground Garage

Source: http://www.ellenzweig.com/html/infra/pos_8.html

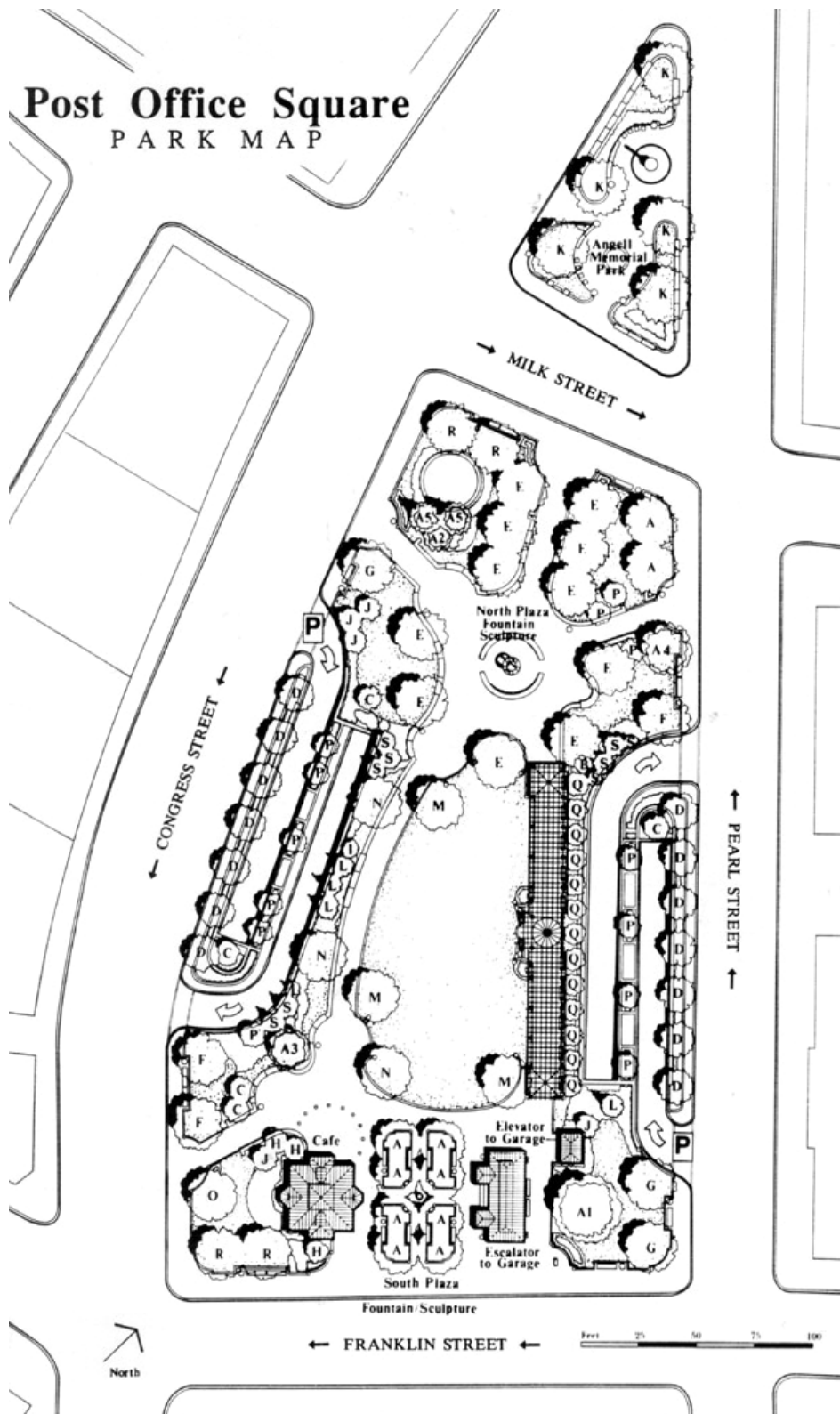


Figure 37 Park at Post Office Square Map

Source: http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/graphics/site1.html

and pleasant and offers immediate pedestrian access to the commercial district.

(http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/perspective_sheets/other1.html) People walking to or from the garage move through the park and get a chance to enjoy it. At the same time, they also activate the park and enhance the security of others.

Identity

Before the park's creation, the area was a "ghost-town" after working hours. Almost overnight, the 1.7-acre new park has become a Boston Landmark (Figure 38). The *Boston Globe* wrote of the park's stunning success, "Post Office Square Park so defines its place that it seems well on its way to creating a new identity, and maybe even a new neighborhood, for the Financial District." (http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/supplementary/magazine/page1.html) Robert Campbell described the business district, previous to the intervention, as "an unfathomable maze of streets and buildings without a center" and one of the achievements of the park is that, "It organizes one's entire perception of the otherwise confusing downtown by providing a new center in exactly the right place. The whole downtown suddenly seems gathered in an orderly array." (http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/perspective_sheets/other1.html) The form of the park not only creates a new center of the area and unites the once neglected surroundings, but also makes the park a true place with remarkable and unmistakable identity.



Figure 38 Park at Post Office Square has become a Boston landmark.

Source: http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/photos/page2.html

Diversity

The park intentionally brings rich plant materials into the heart of the city. With over 125 species of plants, including the permanent loan of six spectacular specimen trees by Harvard University's Arnold Arboretum (http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/perspective_sheets/professional1.html), the small space is designed to have as much biodiversity as possible in the highly urbanized area.

Multi-functionality

Craig Halvorson, the park designer, explained that Post Office Square Park was intended to fulfill multiple functions. (http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/perspective_sheets/professional1.html) First, the park is designed to create a new oasis in the heart of downtown Boston by putting cars underground and a people space above. The park with its lawns, flowers and trees reminds visitors of gardens and woods, and gives users a relief from the city (Figure 39). Second, the park provides a focal open space in the financial district for orientation, giving pedestrians and drivers a sense of direction within the financial district. Third, the park also provides a place to eat, buy flowers, and enjoy wildlife. It attracts people throughout the day and into the evening.

Summary

The Emerald Necklace illustrates how Olmsted's profound vision restored the negative and leftover spaces into the first greenbelt for an American city and, therefore, reshaped the image of the city. The linkage of the park system enhances accessibility, provides a series of diverse habitats in the city, and makes the whole park system able to



Figure 39 the park is an urban oasis in the center of Boston's financial district

Source 1: http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/photos/page3.html

Source 2: http://ublib.buffalo.edu/libraries/projects/bruner/1993/post_office/photos/page4.html

Source 3: http://pps.org/gps/one?public_place_id=20#

serve more functions as well. All these are good guidelines in designing green spaces in cities or districts.

The Central Artery/ Tunnel and Central Artery Corridor project represents how the old elevated highway structure scarred the urban fabric and became a barrier between the different districts. By removing the expressway underground and leaving more than 75% of the ground for public open spaces, the project shows a great potential to reconnect the urban fabric of the city. With figure-ground clarity, the Central Artery Corridor is composed of multiple urban rooms. By having easy accessibility for diverse

users from the various directions, it bridges the gaps once between districts and reconnects the city to the harbor. When the project is finished, the image of the area and the city will be changed and the environmental quality of the area is expected to be healthier as well.

In the ever-expanding city of Boston, the North End provides a good template of how to remain a true community. Without doubt, high density makes a great contribution to the vitality of the North End neighborhood. In addition, the combination of the historical and cultural charm, the physical uniqueness, the friendly pedestrian network, and the close-grained diversity of uses also prove that the North End is a vibrant and thriving neighborhood that can change with time and still have its vivid identity.

The park at Post Office Square exemplifies how underused or unused spaces can be transformed into viable parks and open space. It is a success from all perspectives. Office workers and visitors enjoy the restful green garden and its food service; those arriving by car enjoy greatly improved accessibility; owners of abutting buildings and their retail tenants enjoy increased value; the city gains revenue from sale of the land. Even just one small piece of land can be a catalyst to successfully reconnecting the city fabric.

Every precedent presents a good case in a certain scale and has been analyzed according to the applicable design criteria (Table 3). They all serve as the inspiration for how the design criteria can be integrated to reconnect the urban fabric of Atlanta in the following design project.

Design Criteria Precedents	Figure-ground Clarity	Connection, Continuity & Corridor	Accessibility	Identity	Diversity & Mixture	Multi- function
city/district scale Emerald Necklace		☆	☆	☆	☆	☆
city/district scale Central Artery/ Tunnel & Central Corridor	☆	☆	☆	☆	☆	☆
neighborhood scale North End	☆	☆	☆	☆	☆	☆
intimate scale Park at Post Office Square	☆		☆	☆	☆	☆

Table 3 Matrix of Precedents and Design Criteria

CHAPTER 5 DESIGN PROJECT DOCUMENTATION

Site Condition

This design project extends the work begun in my studio class, Land 6040 Community and Place, which I took in the spring semester of 2001. The whole site is defined by Ralph McGill, North Avenue, Piedmont Avenue, and the Downtown Connector (I75/I85) (Figure 40 & 41). It is located between Downtown and Midtown

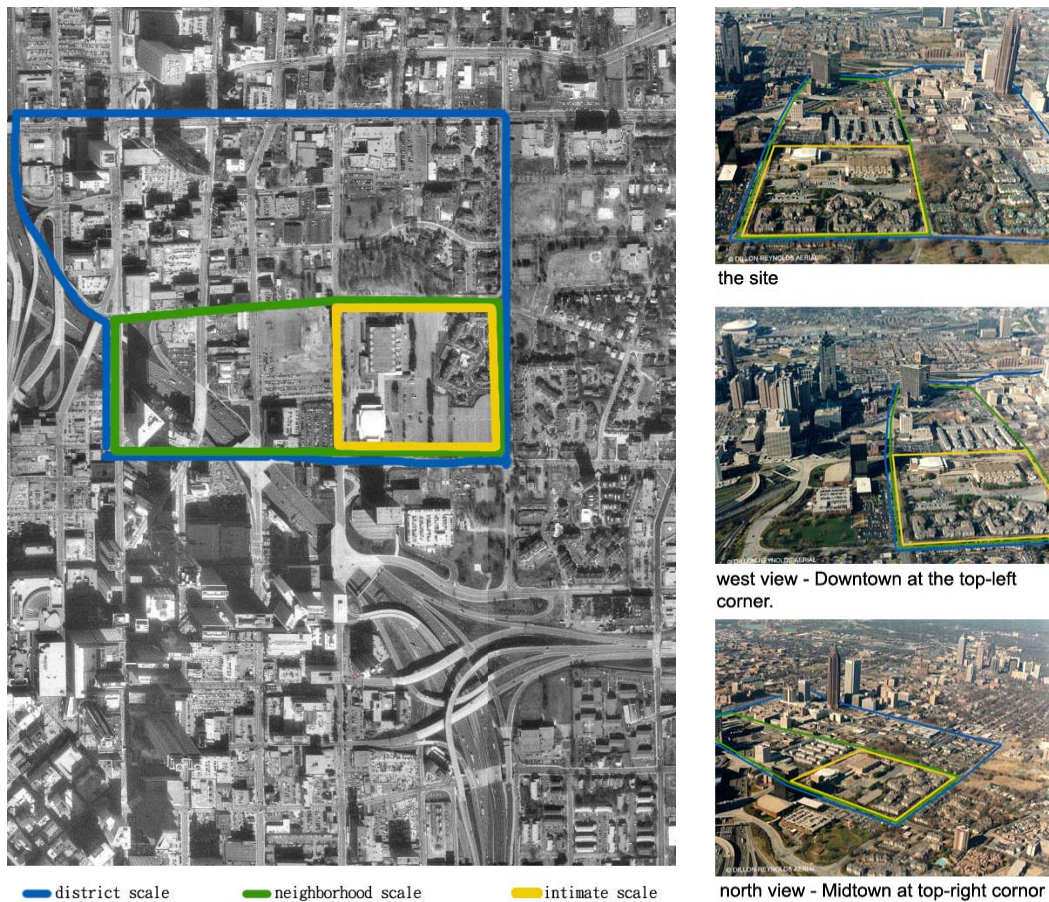


Figure 40 Aerial Photos of the Site

Sources: <http://www.terraserver.com> & HOK Planning Group

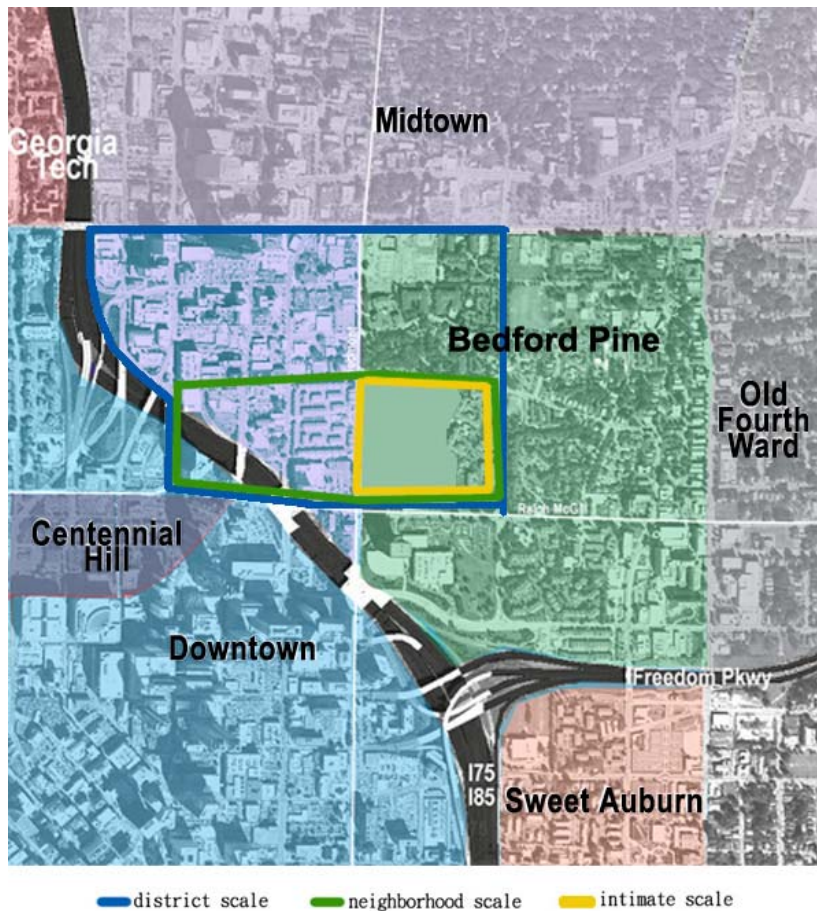


Figure 41 The Surrounding Areas

Source: image edited from the Presentation Award of HOK Urban Competition 2002, by Lauren Colunga, Kathryn Clarke, and Stephanie Shelton.

but it is perceived as not quite Downtown and not quite Midtown. Without a sense of place, this limbo area has long been known as “No Man’s Land”. The Downtown Connector bisects Peachtree Street and blocks this area from connecting to Downtown. Abandoned retail storefronts, parking structures, plenty of vacant parking lots, inward facing buildings, and open spaces fenced from the public are all downfalls of this area. They discourage street activities and make the sidewalks unsafe and unsightly. The sidewalks are frequently crowded by homeless people, especially around the services aimed toward them. (Figure 42-47)



Figure 42 Abandoned Stores at the Intersection of Peachtree and Ralph McGill.



Figure 43 Parking Deck next to the Civic Center MARTA Station on W. Peachtree St.



Figure 44 Enormous, Vacant Parking Spaces at the East Side of Civic Center.



Figure 45 The Parking Space in front of Sci-Trek, along Piedmont St.



Figure 46 Inward Facing Residential Buildings with Perimeter Fences.



Figure 47 The Existing Public Space next to St. Peter's Church has been locked.

Despite the above issues, the site has a great potential for improvement. The adjacent Bedford Pine and Centennial Hill Redevelopment Areas will soon count over 2000 new housing units, providing the base for a 24-hour multiuse walking community, which can support retail and other urban services. (Figure 41) (Georgia Tech Urban Design Workshop, 2001, p2) Moreover, the area falls within both the Downtown Improvement District and the Midtown Improvement District (http://www.midtownalliance.org/pdfs/mid_annreport_01.pdf), which will generate additional property tax dollars earmarked for capital improvements, maintenance of the public environment, and public safety. (Georgia Tech Urban Design Workshop, 2001, p2) The site presents a great opportunity to apply the design criteria that have been developed in this thesis. In order to constantly reconnect the urban fabric of Atlanta at different levels, the design will be described in three scales: district scale, neighborhood scale, and intimate scale.

District Scale Design

The district houses the Civic Center MARTA Station, Crawford Long Hospital, Crossroads Community Ministries (a social service agency), the Center at Peachtree and Pine (a homeless center), St. Luke's Episcopal Church, the Atlanta Civic Center, Sci-Trek (a children's interactive science museum), a residential oriented retail node at the intersection of North Avenue and Piedmont Avenue, high-density residential neighborhoods at the east edge of the district, some other retails along Peachtree Street, and many large surface lots and vacant parcels. (Figure 48)

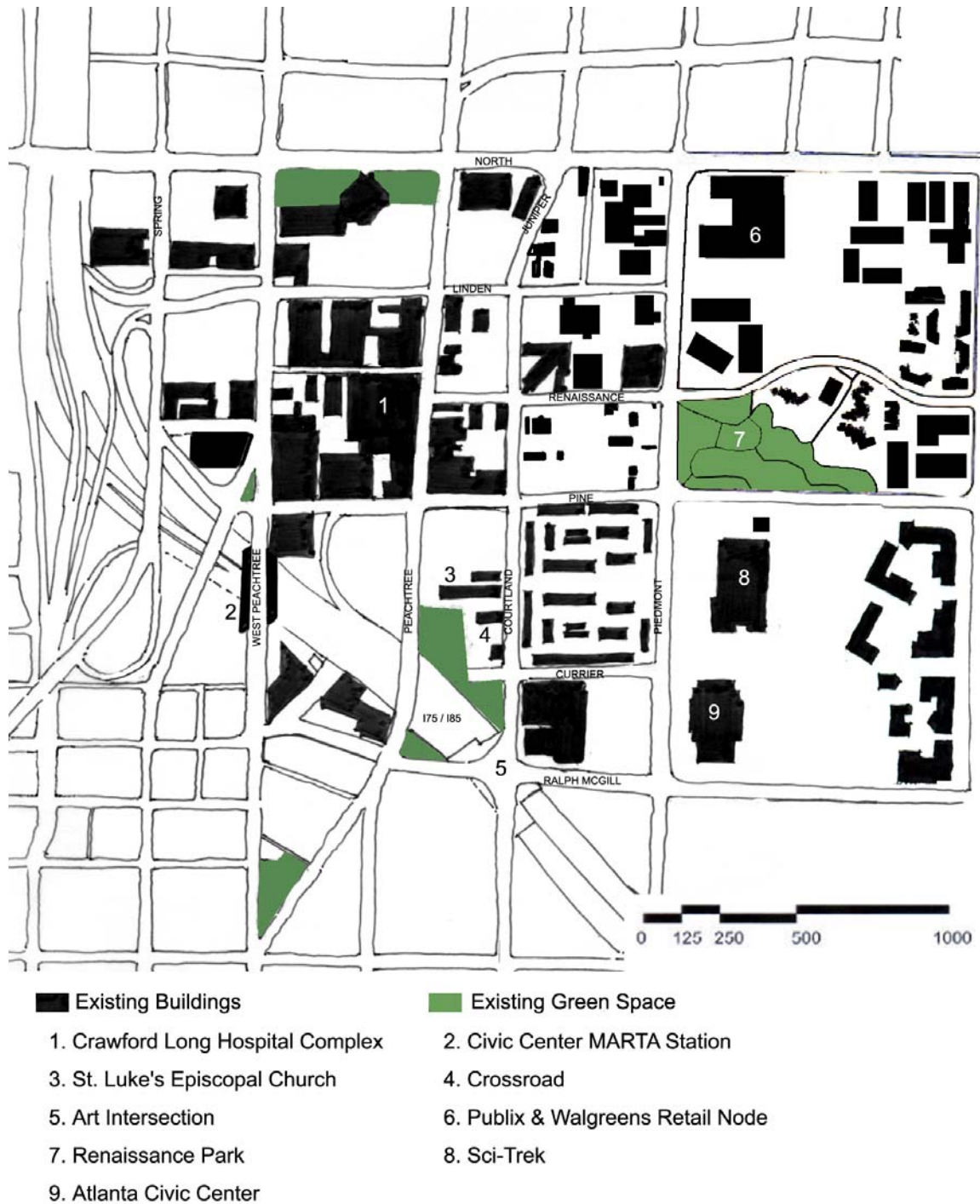


Figure 48 Base Map of the District Scale Design

Figure-ground Clarity

By infilling the vacant parking lots and redeveloping the existing underused buildings, continuous frontages will be created and will serve as the well-defined edges of the streets, as well as those of the outdoor rooms in the blocks. (Figure 49) They will provide the physical foundation for commercial, cultural, social, and residential uses.



Figure 49 Master Plan of the District Scale Design

Connection, Continuity and Corridor

Because of the figure-ground clarity, the streets will become urban corridors with continuous solid boundaries. Based on their connections to Downtown and the retail nodes of Midtown that are marked in the 2001 Midtown Atlanta Retail Report (http://www.midtownalliance.org/pdfs/Retail_Report.PDF), each urban corridor will have its distinctive characteristics. First, Peachtree Street is the most obvious and most important urban corridor that connects the district to Downtown and four retail nodes of Midtown. (Figure 50) These nodes will further link other corridors to Peachtree Street. Along with this corridor, people can move from Downtown to the north end of Midtown and reach diverse and interesting spots, including some cultural venues, such as the Fox Theater, the Woodruff Arts Center and the High Museum of Art.

Second, Piedmont Street has the potential to redevelop as a street-oriented urban residential corridor that connects all the existing and emerging residential neighborhoods in the district to those in Midtown. At the intersection with North Avenue, this corridor has the only significant grocery node in the southern Midtown market. The corridor also leads people from the Atlanta Civic Center to Piedmont Park.

Third, North Avenue provides the opportunity to connect the district with the Georgia Institute of Technology, the Centennial Neighborhood, and the Bedford Pine Neighborhood. With the North Avenue MARTA Station, two Georgia Centers (planned) (Midtown Atlanta Retail Report, 2001), the Bank of American Plaza, the New Atlanta Symphony Hall (planned) (Midtown Atlanta Retail Report, 2001), and the recently

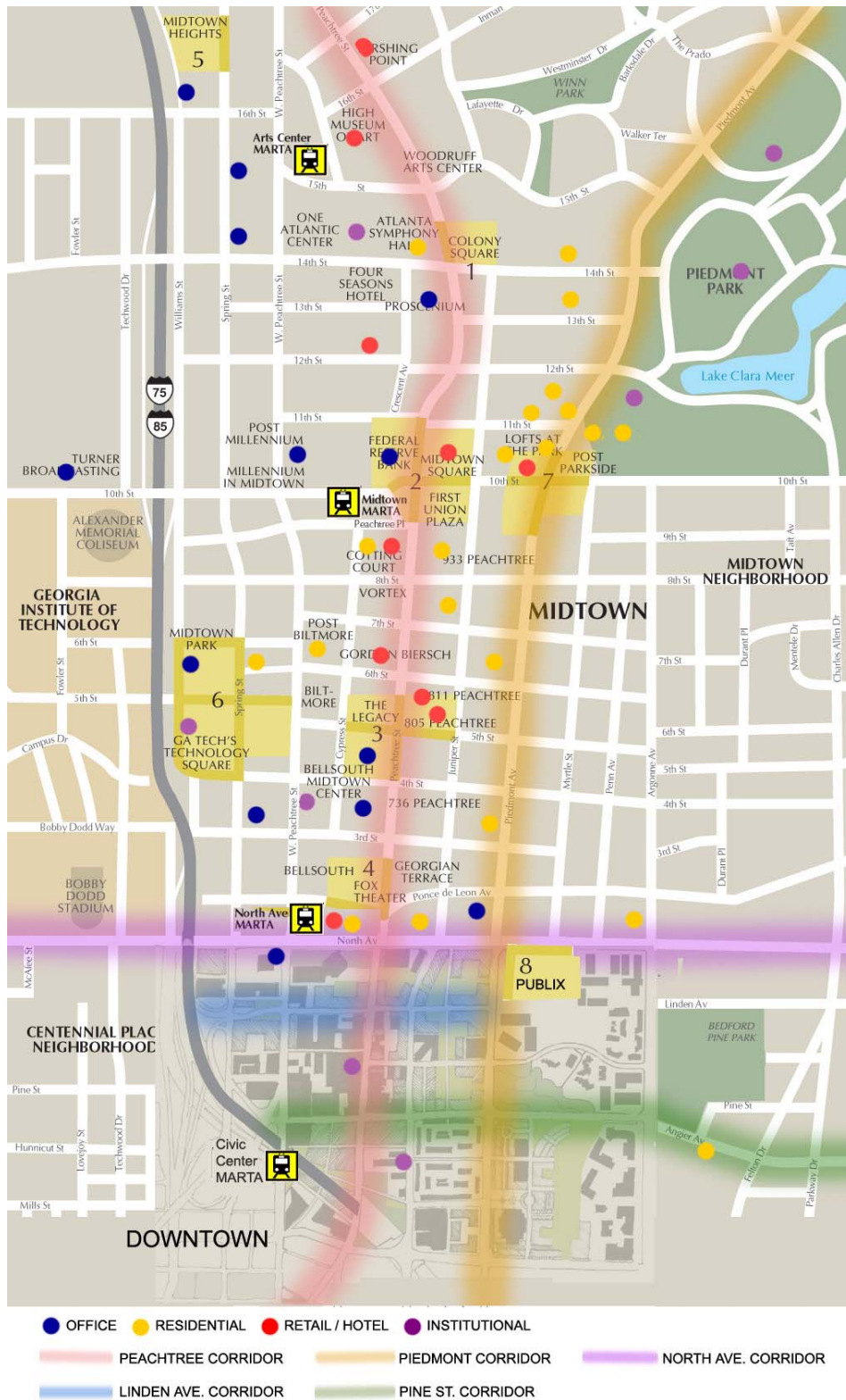


Figure 50 Urban Corridors in the District Scale Design

Source: Image edited from <http://www.midtownalliance.org/pdfs/Retail%20Nodes%20Map.pdf>

completed Publix retail node, North Avenue will become as a high-density mixed-use urban corridor, including street level retail wherever feasible.

Fourth, by infilling and redeveloping the blocks, Linden Avenue can be a medium density mixed-use corridor. To connect with other corridors and to be a pedestrian friendly environment, street level retail and residential development should be emphasized along this corridor.

Last, Pine Street is the main east-west corridor in the middle of the district, which connects the Civic Center MARTA Station to the residential neighborhoods and Bedford Pine in the east.

Just like Maki's mega-form, urban corridors should remain open-ended for potential development in the future, and meanwhile, they should also interconnect with one another to create a network linking the inside and outside of the district. In addition, by carefully arranging the diverse mixed uses along these corridors, they will not only be the physical connections that link the different urban nodes together, but they can also become places with unique characteristics.

In consideration of the ecological approach, the design creates two green corridors in the district. (Figure 51) While keeping the continuity of street frontages for street level retail, some outdoor rooms in or between the blocks will become a series of green spaces with full accessibility to the public and connections with the existing green spaces. Through these green corridors, the district will be urban yet green. Like one of the design concepts in the Emerald Necklace, the green corridors will also improve water infiltration in the district.



Figure 51 Urban Green Corridors in the District Scale Design

Accessibility

In order to promote a balanced and comprehensive approach to transportation in the district, the design has equal emphasis on pedestrians, bicycles, and automobiles.

Following the suggestion in the *Synthesis Briefing Book of the “South of North” District Workshop* (Georgia Tech Urban Design Workshop, 2001, 16), the major corridors will be

reduced to a maximum of four moving lanes and the excess capacity will be given to buses, bikes, on-street parking, and pedestrian improvements. More specifically, Spring Street, West Peachtree Street, Courtland Street, Piedmont Street, Linden Street, Merritts Street, Pine Street and Currier Street are good candidates for on street parking along at least one side for part or all of the day. (Figure 52) On the one hand, on street parking

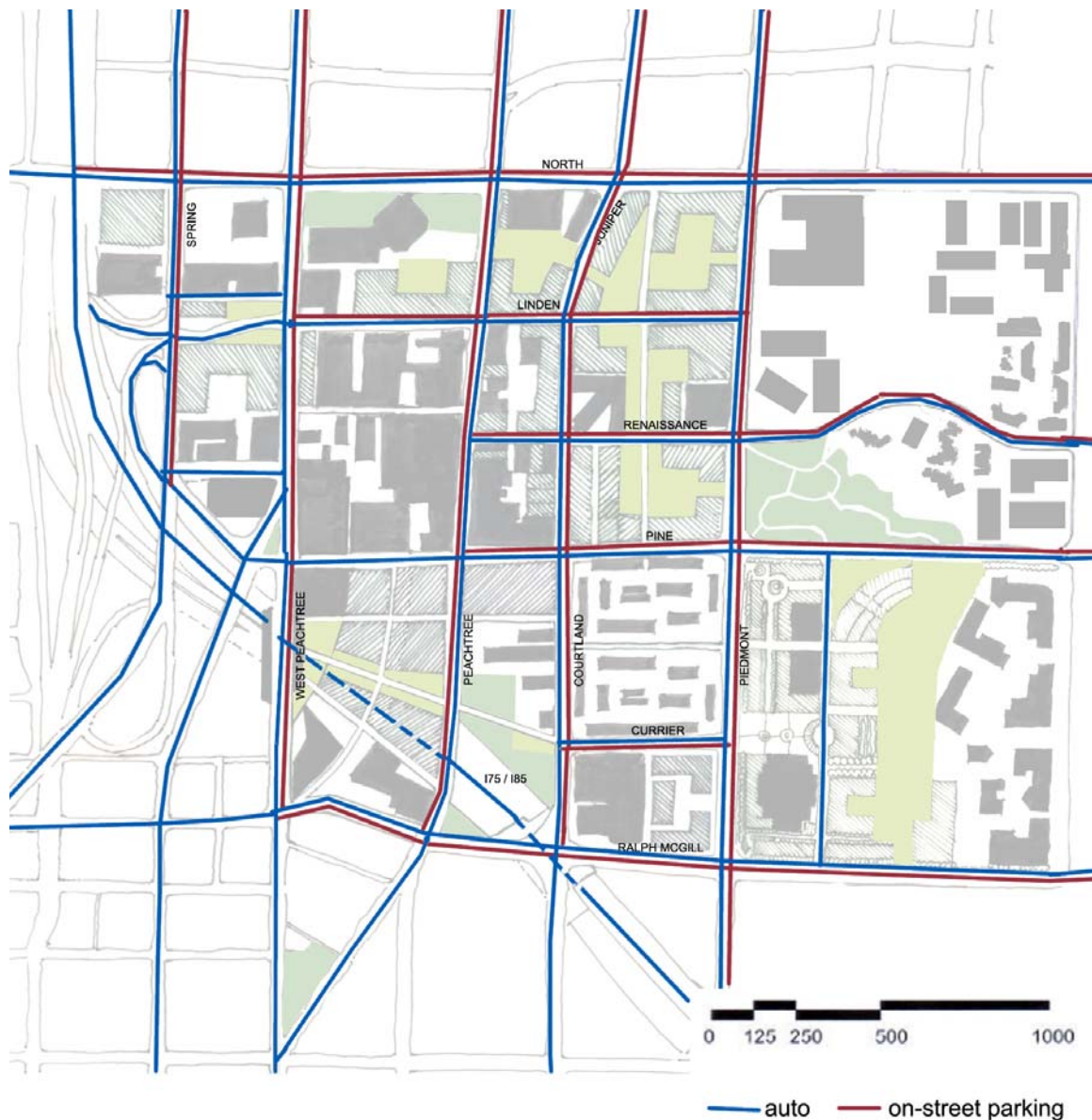


Figure 52 Vehicular Transportation and On-street Parking in the District Scale Design

provides a barrier between traffic and pedestrian, and on the other hand it helps retail. To further calm down the high-speed traffic and make streets more appealing visually and more pedestrian friendly, bulb-outs with trees at the intersections and wider sidewalks should be applied wherever the spaces are available.

According to the Midtown Parking and Transit Plan (2000, 33), the existing bus route provides services along Peachtree Street between Midtown and Downtown. It runs at 20-minute intervals on weekdays, 30 minutes at night and 25 minutes on the weekend. This is not frequent enough for people to use as a convenient transit service. The use rate can be improved by increase services. The design creates much higher density in this district that also help to run this additional transit service.

Following the example of the North End, the design explores additional mid-block pedestrian paths to make the blocks smaller and increase overall movement choices and connections in the district, especially to the MARTA station and the open spaces. (Figure 53) Complying with the Midtown Proposed Bicycle Lanes Plan (<http://www.midtownalliance.org/planning/transportation/bikes.htm>), the proposed dedicated bike lanes will be added on Peachtree Street and Piedmont Avenue from this district to Midtown. The transit/bike lane will apply from Courtland Street through Midtown to Buckhead. The overall goal is to make walking, bicycling and transit more attractive and accessible so people are willing to choose them for their short trips.

Identity

With the Crawford Long Hospital, the district already has a medical identity. The hospital occupies one big block in the site and helps the nearby retail businesses. Its

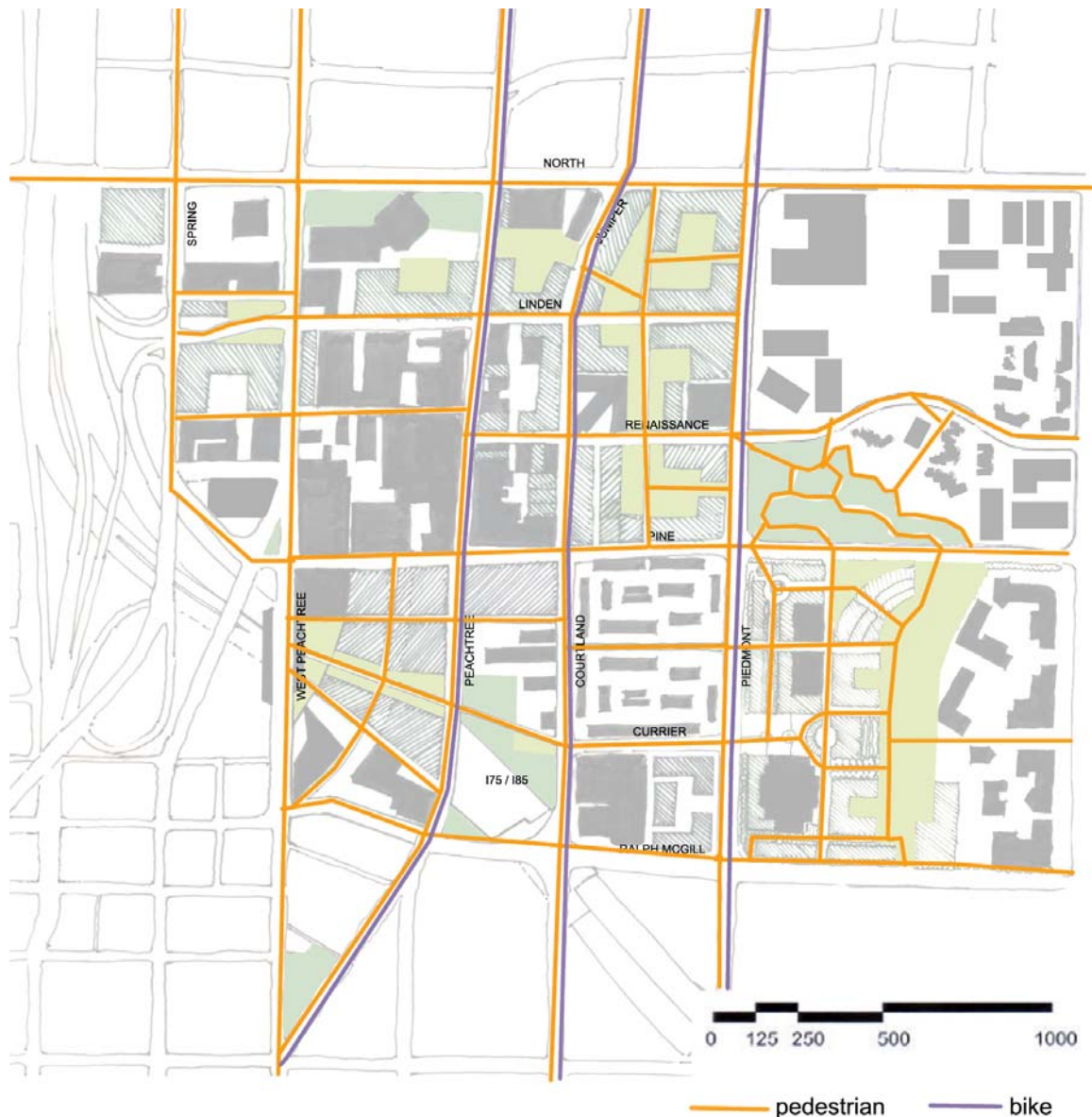


Figure 53 Pedestrian Network and Bike lanes in the District Scale Design

physical building masses, the signage, the related medical retails, coupled with those people in medical uniform walking on the streets from time to time, give this district a medical identity. By improving the accessibility, more people will have chance to walk or drive in this district and get this medical identity in their own cognitive maps.

Aggressively pursuing implementation of those urban corridors in the district will dramatically change the present depressed “No Man’s Land” image into the desired

identity. They will be able to make the district a destination instead of just a senseless place to travel through. It is also worthwhile to maintain the unique “social service provider” identity of the district. There are two existing organizations that provide social services for the homeless people. One is the Crossroads Community Ministries, which has daily soup kitchen and mailroom services. (<http://www.homelessccm.com/>) The other one is the Center at Peachtree and Pine Street, an overflow shelter for men in downtown Atlanta. This shelter is very large and houses between 400 and 700 men each night depending on the weather and the day of the week. (<http://216.239.51.100/search?q=cache:haYTUQ1i5AUC:www.berry.edu/sliffe/carrier/backissues/spring2001/4-12/opletter1.html+%22center+at+Peachtree+and+Pine%22&hl=zh-TW&ie=UTF-8&inlang=zh-TW>) When my classmates and I visited the site, the first impressive image was people lined up on the streets for getting the foods that were provided by these organizations. The “social service provider” identity of the district naturally comes into our minds.

While maintaining the unique “social service provider” identity, the design also seeks to enhance the sense of security. All the public spaces will be carefully arranged to be surrounded by dense buildings that look into them. Hopefully, just like the North End, the densely mixed uses with ground level retail will keep the streets and public spaces busy and create an environment where people watch people. In this way, people feel safer and more comfortable walking and staying in the district. Home to the Atlanta Civic Center, the Sci-Trek, and the New Atlanta Symphony Hall (planned), the district

has a great potential to add artistic characteristics into its sense of place. Integrated with all of the above, the district will be a vibrant place with a medical/social/art identity.

Diversity & Mixture

As discussed in the Connection/Continuity/Corridor section, each urban corridor has different characteristics and density of mixed uses. (Figure 54) Peachtree Street will have high-density mixed uses and will serve as a primary artery to connect Downtown and Midtown. To unite the existing and emerging building masses, North Avenue will be the other high-density mixed-use corridor in the district. Between Courtland Street and Piedmont Avenue, there will be a street oriented residential corridor mixed with office and retail uses, such as corner stores in residential neighborhoods. This corridor will have medium density mixed uses that can smoothly connect the high-density uses along Peachtree Street and North Avenue to the residential corridor in the eastern part of the district. The medical complex between Peachtree Street and Spring Street might add some retail along its street fronts, such as small coffee shops or flower shops. The Civic Center area will mainly concentrate on arts-related use but still include commercial/retail/ residential uses wherever feasible. In addition, the green corridors will penetrate the whole district. Therefore, pockets of green/park will interlock with all of the corridors and add even more complexity to the district.

In a word, to activate a pedestrian friendly environment, the district encourages street level retail with office, parking garage, or residential uses on the upper floors. In this way, the whole district will have close-grained diversity of uses and draw workers, visitors, and residents into it at different time of a day.

Multi-functionality

The core design principle is multi-functionality that integrates all aspects of the district.

First, the streets will be equally dedicated to automobiles, bicycles, and pedestrians.

Second, instead of being a monotonous and depressed area, the whole district will have

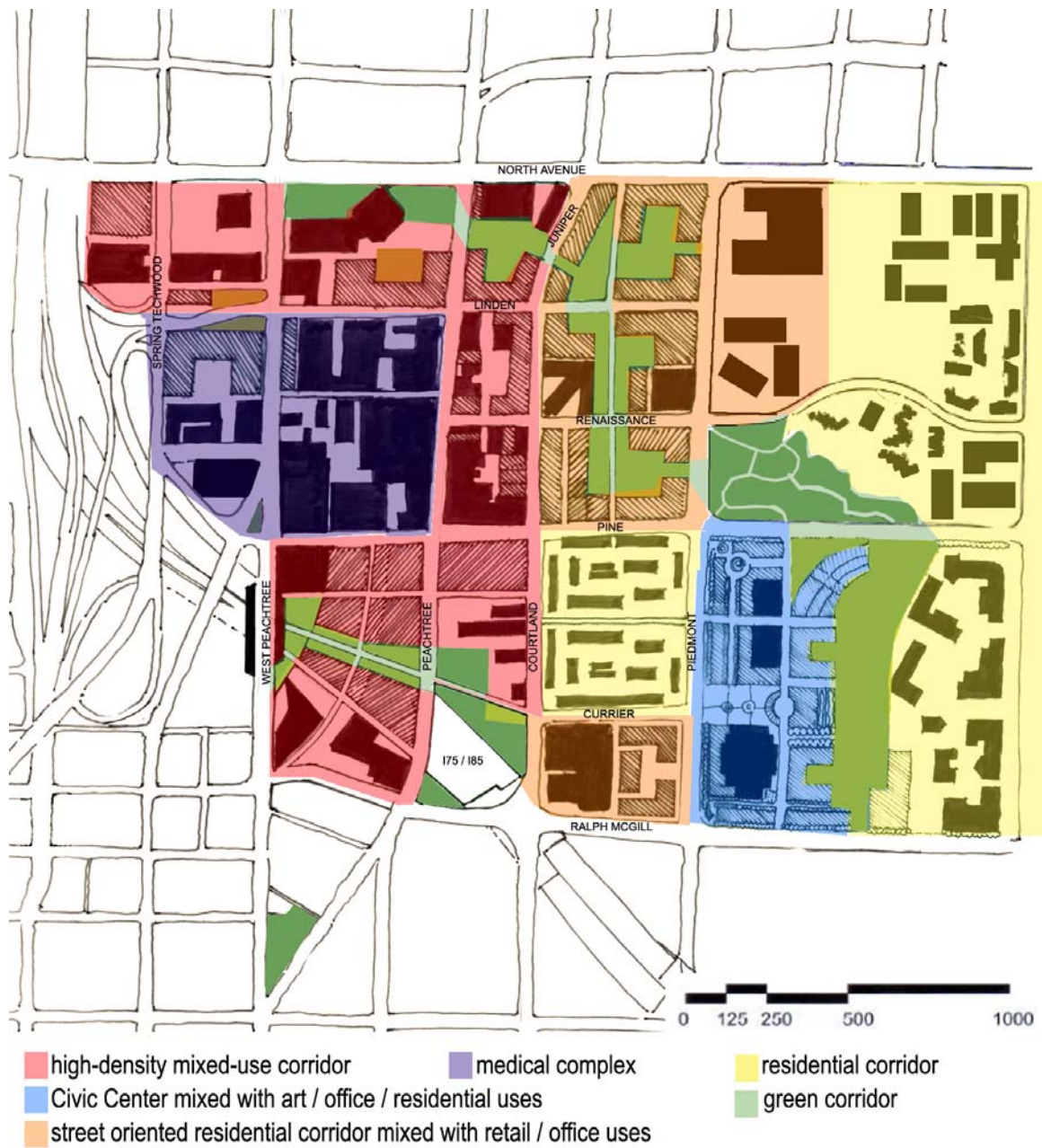


Figure 54 Diversity and Mixed Uses in the District Scale Design

multiple land uses to fill economic, medical, social, artistic, and residential needs. Third, the public spaces will be designed for people as well as for plants and urban wildlife by connecting them into green corridors as much as possible. They will also improve water infiltration in the district. Similar to the eco-effectiveness design philosophy advocated by William McDonough in green architecture (McDonough & Braungart, 2002), multi-functionality is the key to doing the right thing by making an urban place better and more effective.

Neighborhood Scale Design

At the neighborhood scale, the site is located between Pine Street, West Peachtree, Ralph McGill, and Bedford. (Figure 55) It is at the south end of Midtown and just north east of Downtown. About a half of the site is dedicated to surface parking use. The large amount of vacant land destroys the continuity of the urban fabric and makes the neighborhood lifeless. The worse thing is the Downtown Connector (I75/I85) crosses the site and sets a barrier between the neighborhood and Downtown. This physical barrier not only keeps the neighborhood from participating in Downtown's economic development, but also isolates the Civic Center MARTA station from the rest of the neighborhood.

The site houses the Atlanta Civic Center, Sci-Trek, Southface Energy Institute, Crossroads Community Ministries, St. Luke's Episcopal Church, three parking decks, one office building, Renaissance Lofts, and two residential areas. With lots of fences around the church, the residential areas, and even the only on-site green space, the neighborhood is cut into small pieces and loses its quality of being a place.



Figure 55 Base Map of the Neighborhood Scale Design

Figure-ground Clarity

According to the figure-ground clarity, infill is applied to reconnect the broken urban fabric of the site. (Figure 56) Taking a similar solution to the Central Artery/ Tunnel and Central Corridor project, a super slab will be placed to bridge the highway gulf from Peachtree to Courtland, which will provide a strong physical connection to Downtown. The vacant parking spaces along Piedmont and Pine will be filled with new building masses to form continuous street fronts. There will be some other buildings around the

Atlanta Civic Center and Sci-Trek to shape the public space and to create a physical foundation for higher density mixed uses.

Connection, Continuity, and Corridor

Besides connecting the site to Downtown, the super slab will also link the isolated MARTA station to the rest of the site. Similar to the Central Corridor project, part of the slab will be designed as a green space that will combine with the existing park to develop an urban green corridor. (Figure 57)

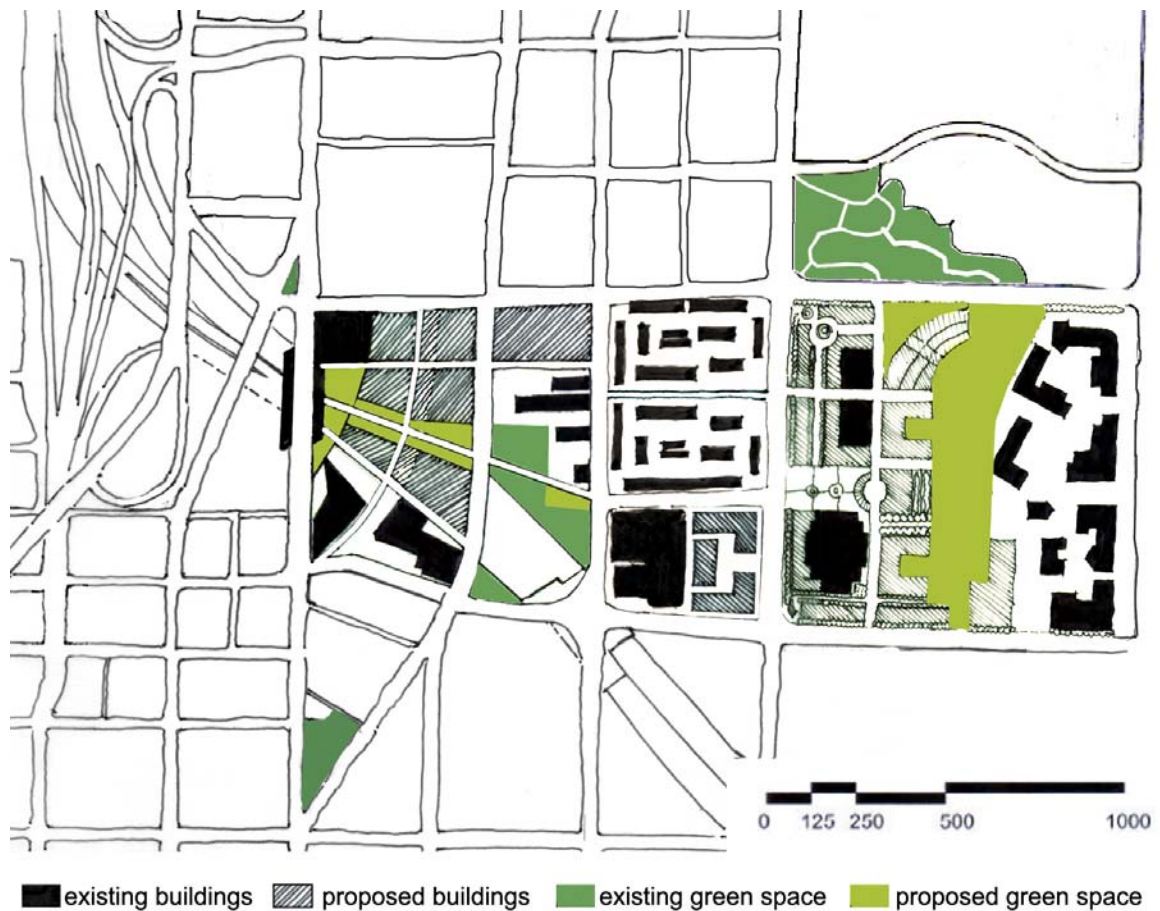


Figure 56 Master Plan of the Neighborhood Scale Design

Accessibility

Good transportation is essential to the economic vitality of any area. This neighborhood is no exception. More specifically, access to the MARTA station is crucial to the improvement of the neighborhood, especially to the development of the Atlanta Civic Center and Sci-Trek. Therefore, the design creates a permeable pedestrian network to enhance the accessibility from the MARTA station to the Atlanta Civic Center. Some pedestrian paths are located in a certain way to encourage the interaction between the residential areas and their surroundings. (Figure 58)

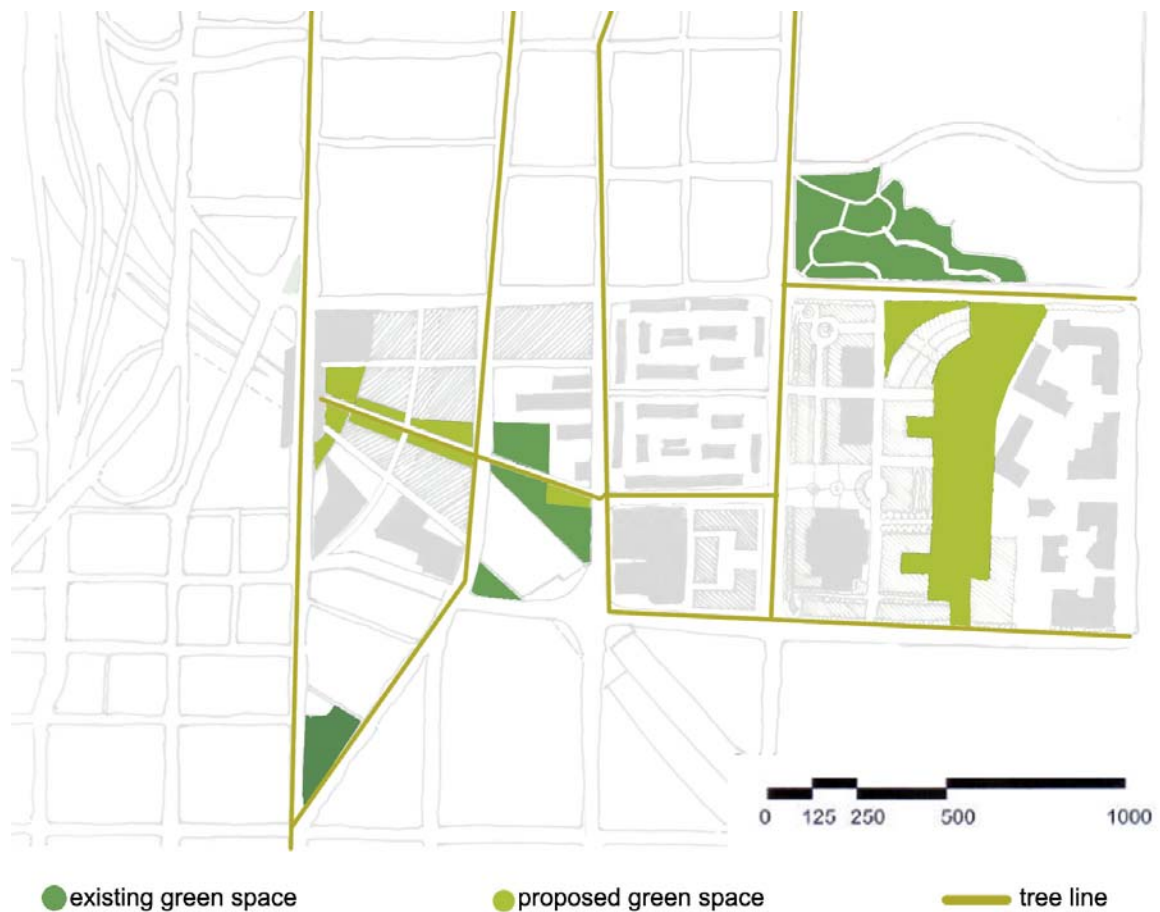


Figure 57 Urban Green Corridors in the Neighborhood Scale Design

Identity

As discussed in the third chapter, in order to have an identity, a place must have some characteristics that make it remarkable and recognizable by people. It also calls for easy accessibility so people can start having some association with it in person and further shape a mental image about the place. Both of these prerequisites have been considered in the design. First, the super slab area has a great potential to give this neighborhood an impressive spot. Second, with high density mixed uses, it will become a node that, based on Kevin Lynch's research, can help people develop their cognitive map. In addition, it will also make the social service centers, the Atlanta Civic Center,



Figure 58 Pedestrian Network and Bike lanes in the Neighborhood Scale Design

and Sci-Trek more accessible from the major hotels in Downtown. In such a way, the existing social and art identity of the neighborhood will be even more vivid.

Diversity & Mixture

The design will enhance the Atlanta Civic Center block as an arts-related urban area with retail/office/parking/residential mixed uses. The vacant parking spaces along Piedmont will be changed into building masses with emphasis on street level retail wherever possible. On the new super slab over the highway gulf, there will be high-density mixed-use building masses that have small blocks with corner pocket parks. They will not only connect with the characteristics of Downtown in terms of program and scale, but also have offices, hotels, restaurants, and residential units to bring people into the neighborhood beyond the work hours of the day. (Figure 59)

Multi-functionality

Applying a similar concept to that used in the Central Artery/ Tunnel and Central Corridor projects, a pedestrian oriented bridge with dense building masses will bridge the highway gulf. The Downtown Connector will no longer be a formidable canyon scarring the neighborhood. Autos and pedestrians will have their own independent spaces on the different levels of the same piece of land. The new building masses will serve multiple functions at different floors. For example, the floors at the auto level can be parking decks. Meanwhile, the floor at pedestrian level will concentrate on street-level retail and the upper floors will be given to office and residential uses. By layering, a piece of urban land can achieve multi-functionality in the neighborhood.



Figure 59 Diversity and Mixed Uses in the Neighborhood Scale Design

Intimate Scale Design

At the intimate scale, the site is one big block defined by Pine, Piedmont, Ralph McGill, and Bedford. Two large-scale structures, the Atlanta Civic Center and Sci-Trek (an interactive children museum), stand in the vast empty parking space without a good relationship to the streets and the neighborhood. The water feature in the entrance plaza was dried out a long time ago and projects an underused image for the whole space. Actually, both the Atlanta Civic Center and Sci-Trek have been struggling to shape attractive identities to promote their use rates. Next to Sci-Trek, the Southface Energy

Institute demonstrates green building technologies and provides classroom and meeting space for groups. The east side of the block is occupied by a group of residential buildings. With perimeter fences, this residential area isolates itself from its surroundings. (Figure 60)

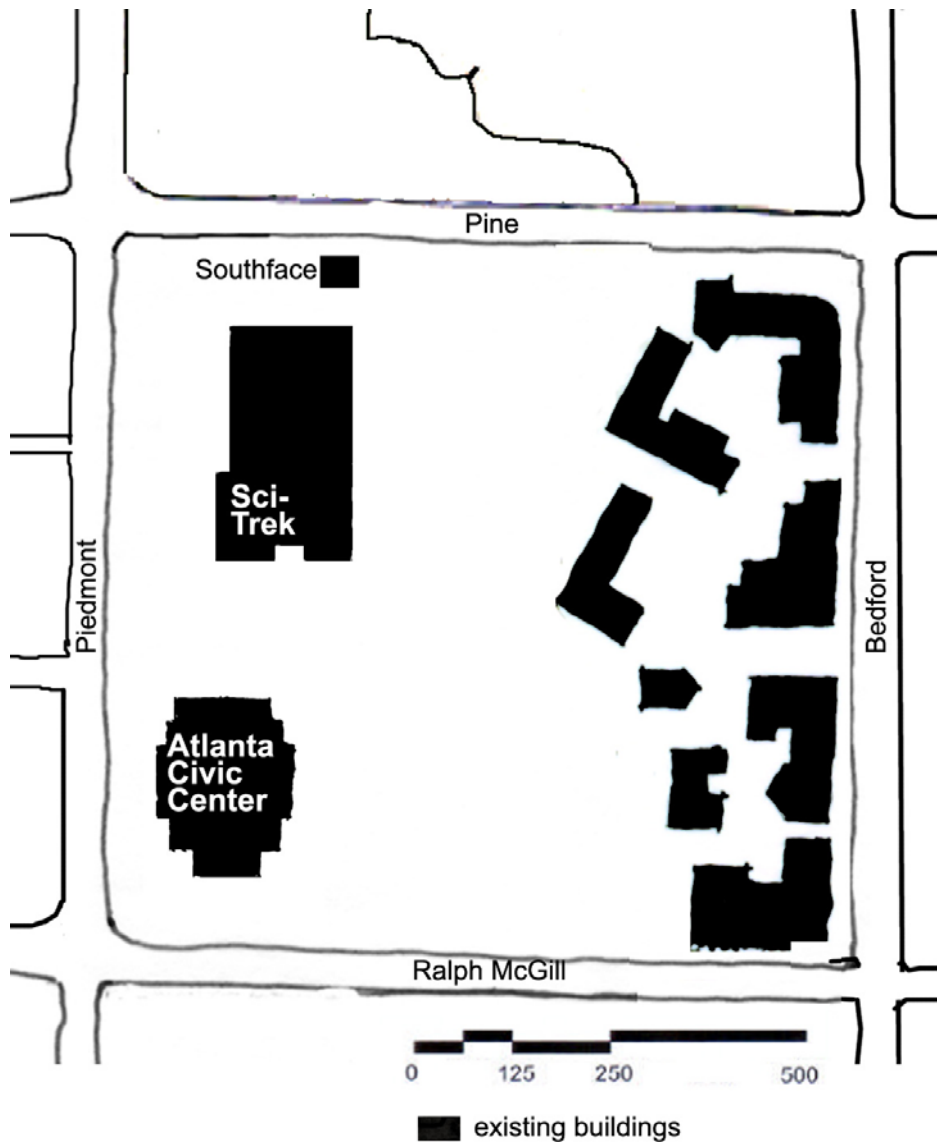


Figure 60 Base Map of the Intimate Scale Design

Figure-ground Clarity

To improve the under use of the space, building masses will be carefully positioned to create visually appealing and more pedestrian-oriented street frontages along Piedmont and Ralph McGill; meanwhile, they will give well-defined edges to the entrance plaza, corner pocket parks, internal pedestrian paths, and green spaces. For example, similar to the park at Post Office Square encircled by its surrounding building masses, a high-rise structure will be placed to enclose the main plaza and provide a central focus of activity. The Sci-Trek structure will be redeveloped into two smaller buildings with more floors. The newly created space will become a path for autos and pedestrians to promote accessibility and interaction between the site and the surrounding neighborhood. Overall, the higher density of building masses will have diverse uses so they can draw more people into the site for working, enjoyment, and entertainment. (Figure 61)

Connection, Continuity, and Corridor

In addition to the continuity of street fronts created by the solid building masses, the design will create three corridors in the void spaces. (Figure 62) First, with the Atlanta Civic Center and Sci-Trek, lively public spaces are essential to make this site a success. The incorporation of an entrance plaza, corner pocket parks, adjoining pedestrian paths, and the greenway will form a public space corridor to serve different people's needs.

Second, in consideration of the topography and the position of underground installed sewage lines, a greenway will be located in the middle of the site, which will link with the Renaissance Park to provide a green corridor in the area. Following the design

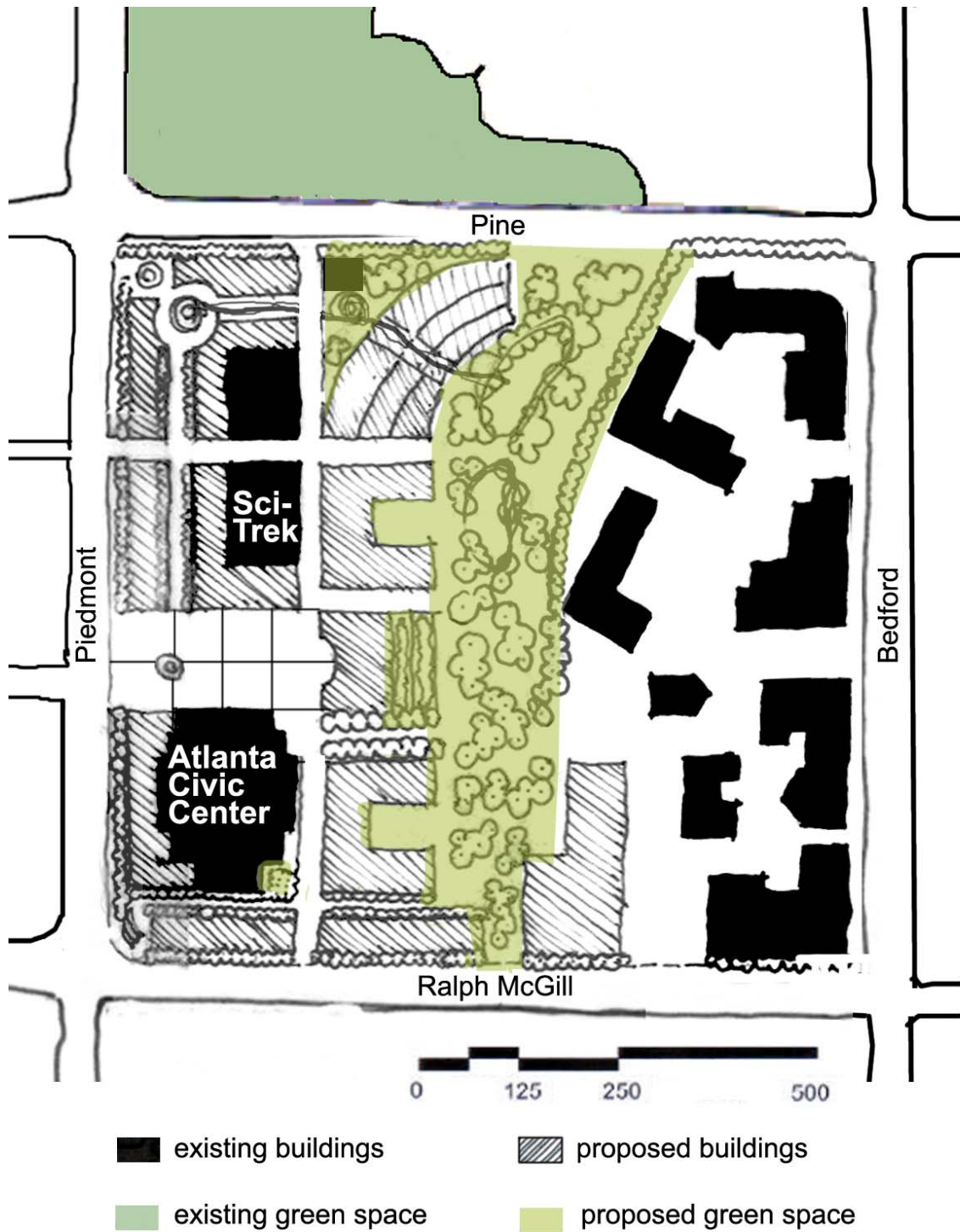


Figure 61 Master Plan of the Intimate Scale Design



Figure 62 Public Space Corridor, Green Corridor, and Water Treatment Corridor

concept of the Emerald Necklace, it can further connect with the Central Park in the Bedford Pine Neighborhood by street trees.

Last, the void spaces will also form a corridor for on-site water treatment. A water feature will be designed in a way to make people aware the local topography. At the lowest area of the topography, a small-scale stormwater and greywater treatment and retention pond can be added to address and demonstrate urban water quality issues.

Accessibility

The block is too big to be a pedestrian friendly environment. It calls for a more permeable network for accessibility. (Figure 63) First, the internal streets will be designed for vehicles to access the building masses, especially the parking structures, from Ralph McGill, Piedmont, and Pine Street. The underground parking space in the central high-rise building, combining with the two adjacent parking decks, will serve the whole site parking needs by allowing overlap of daytime and nighttime users. The two

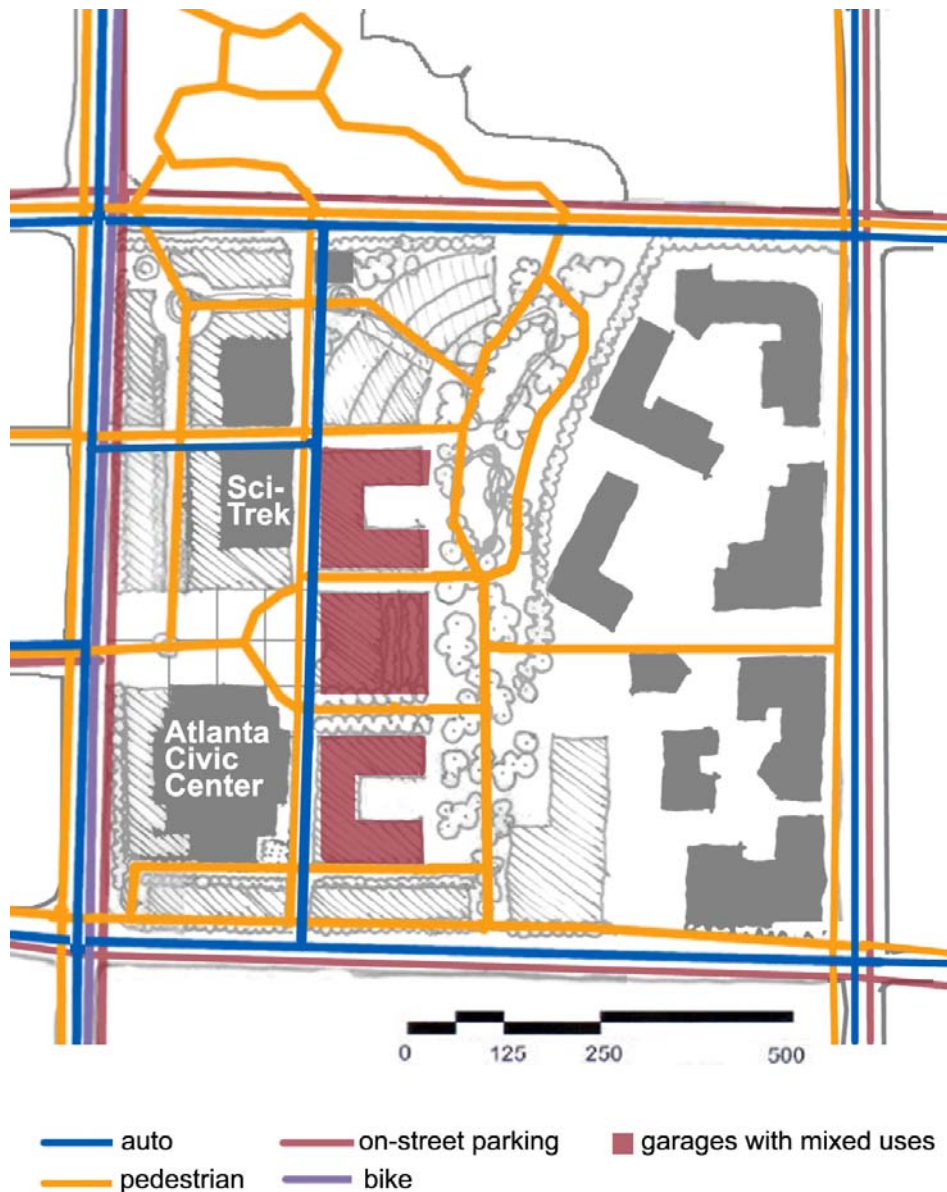


Figure 63 Permeable Network for Autos and Pedestrians in the Intimate Scale Design
parking decks will be modulated to look similar to associated buildings and will include commercial or retail uses on the ground floor.

Second, the interconnected pedestrian paths will allow people to easily reach every corner of the site. For example, the design leaves a series of potential connections between the west side of the site and the east residential area. Overall, the pedestrian

network will not only connect every piece of the site together, but it will also link the once isolated site with the surrounding neighborhood.

Identity

In order to enhance the identity of the Atlanta Civic Center, the visibility of the site will be improved by using signage, banners, and events posters. The corner at Ralph McGill and Piedmont will be treated as a visual focus to attract people's attention. The infill around the Atlanta Civic Center will be given to arts-related uses, including retail, studios and other arts organizations and facilities to establish a critical art mass. The pedestrian corridor in this area can be used as an outdoor exhibition space for community and nonprofit artist groups from time to time.

With Sci-Trek and Southface on the site, the area also has a great opportunity to add an environmental identity. The potential collaborations between them can demonstrate the possibilities and benefits of sustainable building technologies.

Diversity & Mixture

Besides the arts-related and environmental uses, the rest of the site is dedicated to various mixed uses. The street front buildings along Piedmont will have retail or service activities on the ground floor with office or residential uses on upper floors. The central high-rise building in front of the entrance plaza will be an appropriate place for hotel and office uses with parking space underneath. The adjacent parking decks will also have retail or commercial uses on the ground level. The building next to the existing residential area will contain mixed-use activities to serve the residences, such as small groceries, coffee shops, dry cleaners, and hardware stores. In a word, the site will

be mixed with retail, office, hotel, art, and environmental uses to create a vibrant urban place for daytime and nighttime activities. (Figure 64)



Figure 64 Diversity & Mixture in the Intimate Scale Design

Multi-functionality

Overlap and flexibility are the keys to achieving multi-functionality in the site. For example, the public space corridor overlaps the green corridor and on-site water treatment space so the land can serve social needs as well as ecological functions. Besides having diverse uses on the horizontal axis, mixed uses also overlap vertically on different floors of the medium to high-rise buildings. A shared use agreement will also allow multiple destinations to utilize a common parking facility. As to flexibility, the main plaza and adjoining corridors will be designed to be suitable for hosting farmer's markets, arts festivals, ever-changing gallery walks, and public movie screenings. By employing the above multi-functional uses, the site can become a place with social, cultural, and ecological functions.

Conclusions

By applying all the design criteria at three scales, the whole site will be reconnected to Downtown and Midtown by its solid building masses as well as by its void urban corridors. In consideration of connections, continuity, and corridors from large to small scales, the district, the neighborhood, and the intimate site will all have links to their surroundings and become parts of their bigger contexts. The same criterion also helps to reweave the isolated pieces of land together in each site. Accessibility is addressed at all scales to create multiple networks that will place equal emphasis on pedestrians, bicycles, and automobiles. The new form, the improvement of accessibility, combined with better visibility and programs, will dramatically change the image of the sites and shape distinctive place identities. The denser building masses will serve mixed uses and

give the area close-grained diversity. This is an essential element to draw people into the area for different purposes at various time of a day. By integrating the design criteria that develop from physical, contextual, and ecological dimensions, the sites will be able to serve social, art, and environmental functions. In this way, they will become not only vibrant places for people, but also sustainable places for plants and certain animals that can inhabit in such urban green patches. In conclusion, by filling the vacant and formless land, the urban fabric of Atlanta can be reconnected in this whole site. Based on the design schemes, the following images show the potential characteristics of the site in the future. (Figure 65-69)



Figure 65 Super Slab Bridges the Highway Gulf with High-density Mixed Uses.

Sources: Freeway Park, Seattle, Washington. http://www.umass.edu/ecologicalcities/slideshow/slideshow1/seattle_freewaypark.html and <http://www.gate.net/~roblin3/Seattle/Seattle4.JPG>



Figure 66 Main Plaza with Multiple Functions

Sources: Quincy Market, Boston, Massachusetts & Grant Wood Art Festival, Stone City, Iowa

http://www.naafa.org/events/convention99/photos/Quincy_Market.JPG

http://www.traveliowa.com/images/media_center/hi_res_web/Grant_Wood_Art_Festival.gif



Figure 67 Public Spaces and the Ground Level Retail Uses

Sources: Quincy Market, Boston, Massachusetts

<http://www.bostonman.com/durginpark.jpg> & <http://libraries.mit.edu/rvc/kidder/photos/MA05.html>



Figure 68 Urban Greenway

Source: Portland, Oregon's distinctive greenway.
<http://www.umass.edu/ecologicalcities/slideshow/slideshow1/portland.html>

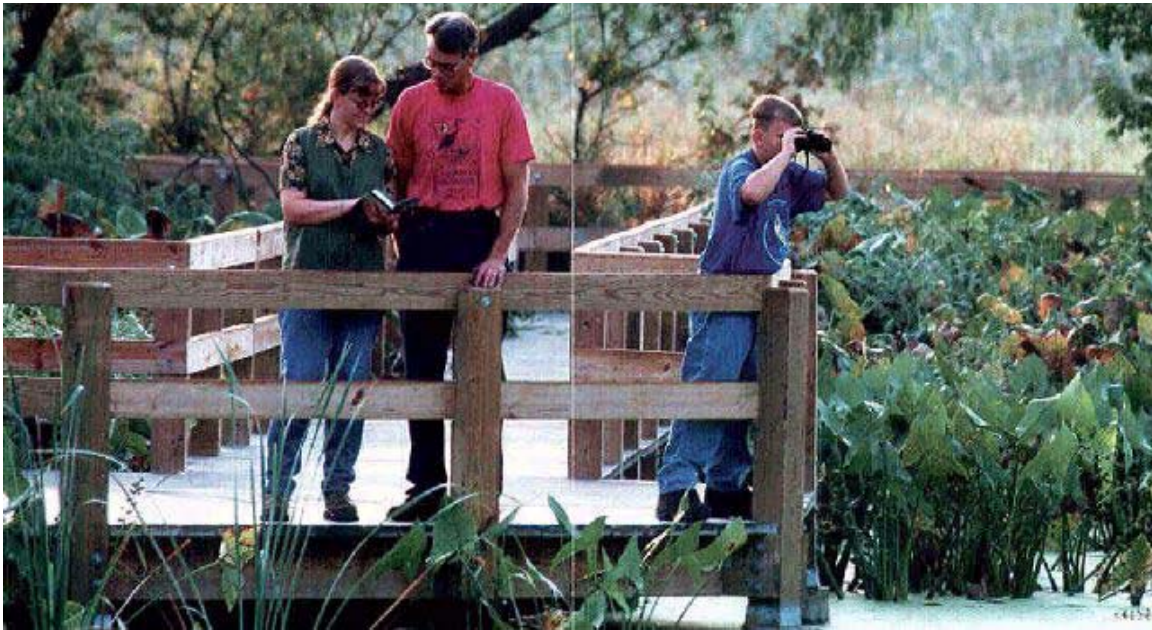


Figure 69 Environmental Use Mixed with Public Use: Urban Wetland

Source: Heron Haven Wetland, Omaha. http://audubon-omaha.org/heron_haven.htm

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