

RESTORING SOCIABILITY THROUGH HUMAN SCALE DESIGN IN PITTSBURGH'S
HILL DISTRICT

by

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(Under the Direction of DAVID SPOONER)

ABSTRACT

Vibrant street life is often celebrated in urban neighborhoods because it acts as the social glue for the community. The Hill District in Pittsburgh, Pennsylvania had rich street life and culture in the early to mid-20th century due to its human-scale urban fabric. Urban renewal efforts, starting in the 1940s, deemed areas of the neighborhood slums; a large portion of the neighborhood was demolished and replaced with large-scale civic architecture and parking lots. Over the next 60 years, these efforts tore at the social cohesion of the Hill District by destroying its urban fabric, which ultimately led to its dilapidation. As the street has historically been the social component of the public realm, it will be the focus of physical design solutions for restoration of sociability and sense of community in the Hill District. This thesis will establish criteria from the literature for human-scale sociable streets and perform case study analysis to inform the design of one residential and one commercial street in the Hill District.

INDEX WORDS: Hill District, human scale, landscape architecture, street design, sociability

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by

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DEDICATION

To the Hill District, whose spirit is cherished by so many.

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CHAPTER 1

INTRODUCTION

Traditionally, cities have developed according to the needs of the pedestrian, and the scale of urban spaces was built accordingly. This urban scale continued until relatively recently, when the automobile became top priority. Urban spaces were constructed to be walkable and interesting. Necessary infrastructure, such as schools, shops, work opportunities, and other services were nearby, creating a city of short distances. This urban scale supported pedestrians and drew people to the street, resulting in social interaction between diverse individuals.

Modernist planning and architecture in the mid 20th century shifted away from the small and intimate, towards large sweeping forms and towering structures. Small structures and organic urban forms were now seen as old and outdated. Modernism desired a clean slate for a new age. The movement altered the scale of the built environment with these changes. Modernists rejected cities' industrial pasts and poor living conditions, imagining an idealized, "highly technological, socialist metropolis" (Lang 1994, 3). They aimed to create architecture that was a work of art, but also solved the cities' problems with new technology (Corbusier 1973).

Modernism's identities, and impacts on the urban scale, were most clearly expressed in the housing sector (Lang 1994). Differing schools of thought within Modernism produced planned communities, some referencing the medieval town or village, like Clarence Stein's Radburn, New Jersey, with others imagining a new, technological metropolis. The latter thinking, influenced by postwar attitudes is responsible for widely accepted failures like Pruitt

Igoe in St. Louis (Fig. 1.1), a desolate high-rise, low-income apartment building. Jon Lang writes, “In some cases, taking no concerted action would have been better than the results of carefully orchestrated urban designs” (1994). Modernist housing projects often failed to consider the scale of the built environments they replaced, and did not take the lifestyles of their intended inhabitants, or the problems they faced, into account. This ignorance of people and their relationship to the built environment demonstrated a further lack of understanding of scale and its relation to the social life of place. Although many projects were ultimately unsuccessful, the intention behind them was to improve human conditions.



Figure 1.1: Pruitt-Igoe, a modernist public housing project in St. Louis, Missouri. Image courtesy of the State Historical Society of Missouri.

In this spirit, cities embarked on large projects to transition to this new era, and attract a different class of people. Urban renewal efforts often aimed to offer a symbolic or iconic structure for the city. An influx of vehicular traffic had its own implications as well. Large

amounts of vehicular traffic required new, larger roads. The scale of the city therefore started to adjust to this new requirement (Gehl 2010). Essentially, the city largely departed from its original human scale and welcomed the future with expansive roads, highways, and architecture; this resulted in urban environments that were no longer designed for everyday human use and ultimately lacked the physical infrastructure to support sociability.

This thesis aims to discuss the implications of Modernist ideals that led to a shift in the scale of urban built environments in postwar America and the resulting change in social infrastructure, specifically addressing the destructive urban renewal efforts in Pittsburgh's Hill District in the mid-20th century. The effects of this scale shift can be seen in the deterioration of the community since urban renewal, as described by neighborhood residents in the following chapter. Since the lack of the physical infrastructure to support sociability has been identified as a problem in the once-thriving neighborhood, the street has been selected as a target for design recommendations because of its integral role in the social life of public space. This thesis seeks to answer: How does the scale of the built environment affect people? How do the physical elements of the built environment affect sociability and build social capital? Where in the built environment does urban social activity take place? Which elements of the street promote sociability, and what are the qualities of a social street? How can human-scale redevelopment in the Hill District rebuild its social infrastructure?

Purpose and Significance

In the mid-20th century, many American cities began implementing urban renewal projects in what were deemed "blighted" areas. Pittsburgh notably took on many urban renewal projects, starting in the late 1930s with one of the first public housing projects in the U.S., Bedford Dwellings (Fig. 1.2). Terrace Village (Fig. 1.3) was built in 1941 and was opened by

President Franklin Delano Roosevelt himself, signifying the federal government's role in public housing at the time. Bedford Dwellings and Terrace Village were both constructed to relocate residents of Pittsburgh's Hill District living in slums. Areas of the Hill, some of which lacked indoor plumbing and modern amenities, were considered urban blight and demolished through eminent domain.



Figure 1.2: Bedford Dwellings construction. May 23, 1940.

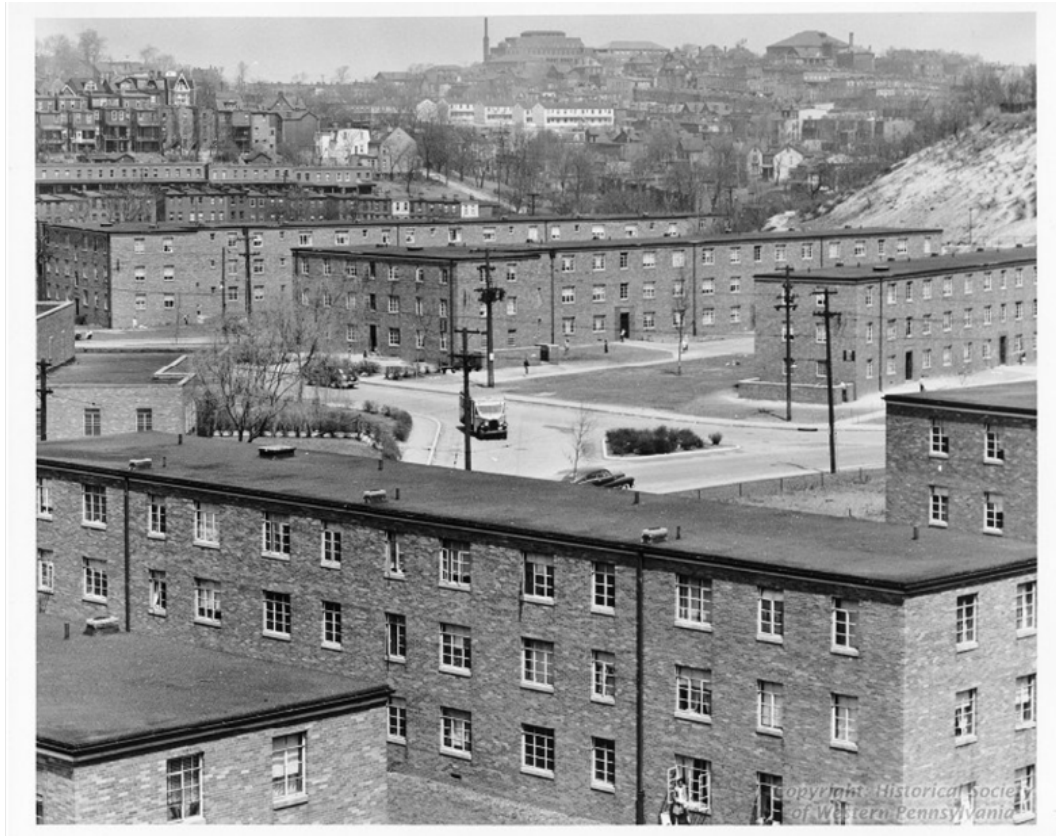


Figure 1.3: Terrace Village, a low-income housing project in Pittsburgh's Hill District, 1951.

Image courtesy of the Historical Society of Western Pennsylvania.

The Hill District, a historically African-American neighborhood in Pittsburgh, has been ravaged by poor urban planning practices since the mid-20th century. Starting in 1958, the construction of the Civic Arena, and its related infrastructure, was the last of many events that led to the destruction of the neighborhood's connection to the downtown Pittsburgh. This event, along with other renewal efforts that preceded it, represented Modernist urban design theory, which departed from a smaller, walkable human scale and shifted toward large, expansive complexes or towering structures.

Since the events of the 1950s and 60s, the Hill has experienced economic and population decline. Several master plans have been developed to revitalize the Hill and elicit public support.

The most recent comprehensive master plan was prepared for community stakeholders by Sasaki Associates and Stull & Lee, Inc. The Sasaki plan primarily addresses economic redevelopment and land use programming. While it does advocate for improved streetscapes, these proposals do not specifically mention human scale or sociability of streets and neighborhoods. This master plan will be utilized to inform a selection of criteria application sites and provide information on community goals. These proposals for the neighborhood streets do not adequately consider the previous scale of the urban fabric in the Hill District and how it relates to social activity and thus neighborhood cohesion and relationships. A more comprehensive overview of the master plan is discussed in Chapter 5. This thesis aims to identify qualities of a human scale, sociable street and apply them to a redesign of streets in the Hill.

Methodology and Overview of Chapters

The methodology includes a literature review to compile the qualities and underlying core values of human scale, sociable streets. This compilation will inform the selection of case study examples, demonstrating these street qualities and values with their corresponding design techniques. The previous design proposals in the Sasaki master plan will be used as a baseline for the redesign of streets for sociability in the Hill District, to which the qualities and values obtained from the literature will be applied.

This thesis will begin with a comprehensive overview of the history of the Hill District, its population, demographics and built environment. This historical account will explore how Modernist urban design theory influenced the urban renewal efforts in the Hill District, specifically addressing the shift from small to large scale environments. The third chapter will define human scale and explain the value of sociability in an urban environment, calling out the street as the focus for sociability. Human scale and sociable street qualities are identified and

quantified, if applicable. Chapter 4 will provide case study examples of streets that demonstrate the qualities outlined in Chapter 3. Chapter 5 will provide more information on previous design proposals and context for the selection of criteria application sites. Designs for a commercial and a residential street will be presented and explained, followed by a conclusion to the thesis.

Limitations and Delimitations

This thesis will be limited in scope to streets and surrounding areas as they pertain to the street design. In this thesis, the term “human scale” will be defined in terms of the physical built environment, as opposed to economic or other definitions.

A comprehensive master plan of the entire Hill District area including its streets was not considered for practicality and time constraints. The information about the community and its goals is obtained from documents created from community meetings with residents, as no resident surveys or interviews were conducted for this thesis. While the following chapter heavily discusses African American culture in the Hill District, the information serves as background and context to the problem, and the resulting design solutions are meant to serve anyone, regardless of cultural background or ethnicity, but are specifically designed for the selected sites in the Hill District.

CHAPTER 2

THE HILL DISTRICT

Early History

Early development of Pittsburgh began after the Revolutionary War. The Penn family distributed land and hired John Woods to lay out the city on May 31, 1784 (Cunning 2013). The city grid ran parallel to the two rivers, the Monongahela and the Allegheny, converging at the point which forms the Ohio River. Rural tracts of land surrounded the downtown grid. The Hill was originally farmland during the early years of Pittsburgh. These rural lots were eventually subdivided into smaller parcels (Figs. 2.1-4). Due to the Hill's proximity to downtown, rail lines, and the glass industry, small frame houses and businesses began appearing between 1850-1870, and the neighborhood began to densify. By the turn of the century, industrialization of the area further increased, producing the smog that inspired the nickname of the "Smoky City," or "Steel City" (Cunning 2013). The city was expanding as it densified, attracting more people with its bountiful opportunities for work.



Figures 2.1-2: 1830 map of Pittsburgh and close-up of the Lower Hill District. Molineux 1830.

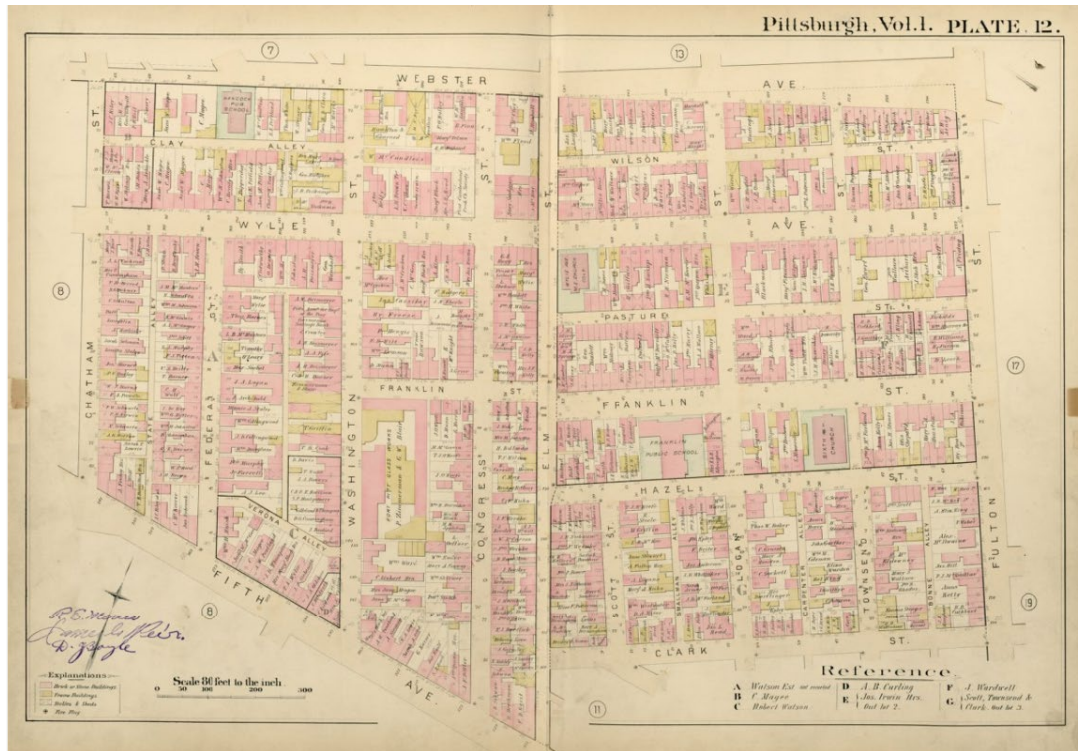


Figure 2.3: 1889 Hopkins map of the Lower Hill District.



Figure 2.4: 1910 Hopkins map of Pittsburgh.

A wide range of ethnicities began to replace the area's original settlers. Large number of Jews emigrated from Europe's ghettos between 1870-1880. Italians, Syrians, Poles, and Greeks

followed. African Americans started arriving in greater numbers between 1880-1890, seeking refuge from oppression in the South (Cunning 2013). Hill residents made use of settlement houses, such as the Irene Kaufmann Settlement House, which provided vital services to immigrants and newcomers (Fig. 2.5). At the turn of the century, the Hill was becoming overcrowded. It was no longer a suburb adjacent to the small town, but now a part of a growing city.

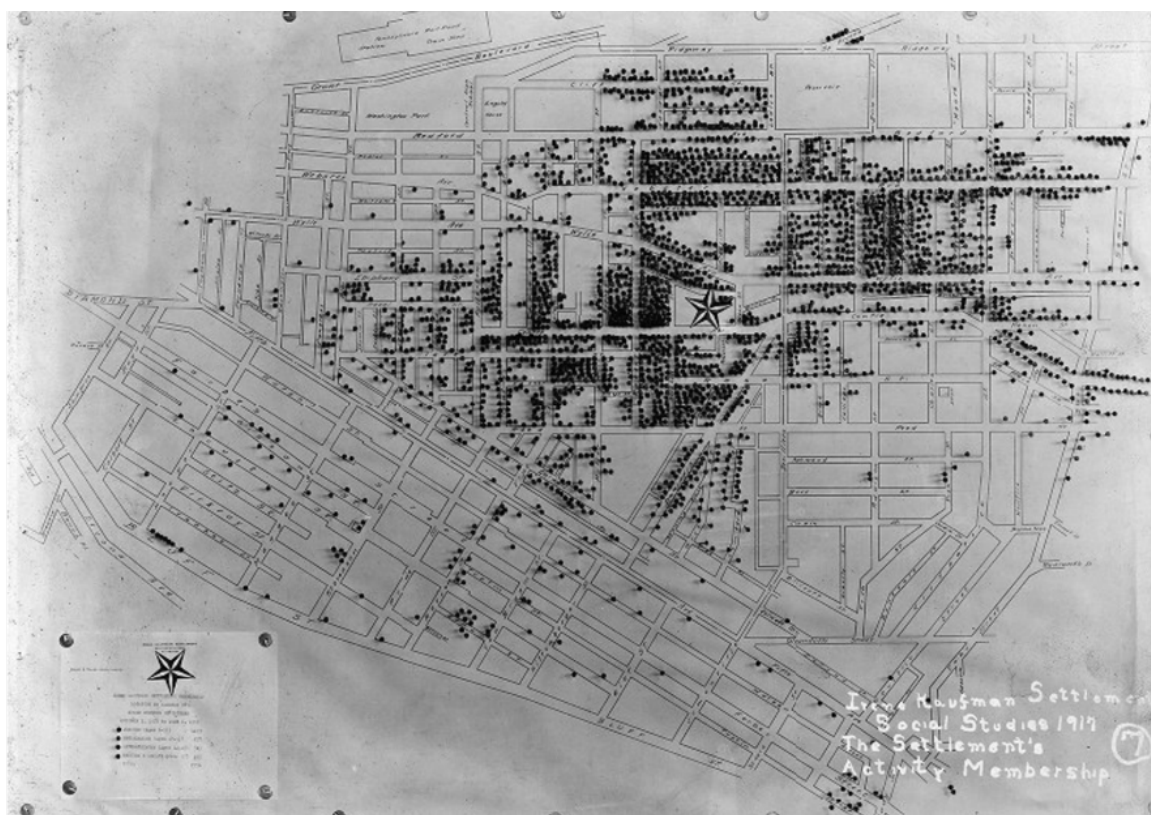


Figure 2.5: 1917 Map of Irene Kaufmann Settlement House Membership

Formation of a Community

The petition to the Pennsylvania General Assembly to create Allegheny County on February 14, 1787 was the first evidence of African American participation in community life (Glasco 2004). The 1820s marked the first significant wave of migration of escaped slaves and free Blacks from the south. Coal mining on Mount Washington was one of the first industries in

the city. Factories popped up in the South Side, then known as Birmingham. By the end of the 1820s, more than 1,000 free slaves resided in the city and its suburbs (Glasco 2004). In the 1830s, the Black community grew with the creation of Black churches, schools, and social organizations. The Bethel African Methodist Episcopal Church opened in 1822, preceded by informal church gatherings in Black homes. In 1837, the Pittsburgh Directory gives a figure of 2,400 Africans living in the city and its suburbs. According to these figures, Blacks were outnumbered only by Irish and German immigrants. Since the first wave of migration, Pittsburgh's Black population was concentrated in the Lower Hill, then known as "Hayti." In the 1830s, other suburbs began to grow in this area; most notably, Arthursville (Glasco 2004). Arthursville, named for William Arthurs who bought the land in 1809, was located between present-day Center and Bedford Avenues, ending at Arthur Street (Dyer 1999).

By the mid 1830s, the city was acquiring basic civic services such as a prison, bank, and five new schools. Prominent Black names included Vashon, Woodson, Richards, Tanner, Brown, Peck, Templeton, Lewis, Mahoney, and Delany. These names were not only known in Pittsburgh, but also in northern centers for the abolitionist and antislavery, temperance, and women's rights movements. Many abolitionists, such as Frederick Douglass, came to Pittsburgh and visited the Vashon and Brown homes in the Hill, specifically in the area known as Arthursville. Abolitionist William Lloyd Garrison described the city at this time as "busy, though dingy and homely," that "closely resembles the manufacturing towns in England" (Glasco 2004).

Due to Pittsburgh's rising status as an industrial center in the northeast, it was also at the forefront of the historic abolitionist and antislavery movements, fueling the growth of the African-American community (Glasco 2004). Abolitionism throughout the northeast inspired the creation of several African-American societies and organizations in Pittsburgh during the 1830s.

Local societies, along with news of slave revolts in the south and abroad, ignited the organization of the African-American community in the city, and particularly in the Hill (Glasco 2004).

By the end of the 1830s, the African-American community was concentrated in the Lower Hill and Arthursville (between Centre and Bedford Avenues, ending at the Arthur Street), with its wealthier counterpart living in the Golden Triangle downtown. In 1845, a fire downtown drove more people to the Hill, including more European immigrants, creating a more racially diverse neighborhood through the 1850s (Dyer 1999). The Fugitive Slave Act of 1850 greatly impacted the African-American population in the Hill. Fearing imprisonment or capture, many people fled to Canada. Pittsburgh's African-American population was cut in half, from 2,000 to 1,000 (Glasco 2004). Pittsburghers committed to ensuring the freedom of former slaves sprung to action to aid their escape. Prominent figure Martin Delany even traveled to Nigeria to arrange a settlement area and urged people to emigrate, earning the title, "Father of Black Nationalism" (Glasco 1989). After the Civil War, the adoption of the 15th amendment in 1869 forced Pennsylvania to finally give the vote to all male citizens. In 1875, the African-American community fought to desegregate schools, making Pittsburgh one of the few large cities to do so. However, this change was bittersweet as white schools refused to hire non-white teachers (Glasco 1989). Despite making strides in education and voting rights, many African-Americans were still confined to jobs that white and other white immigrants did not want and were widely excluded from mines, mills, factories, and office jobs. Strike-breaking was an exception.

Hill District historian and University of Pittsburgh Professor Laurence Glasco explains that little is known about Pittsburgh's African-American community in the latter half of the 19th century. Between 1870-1900, the Pittsburgh African-American population experienced more growth than any time in history, rising from 1,162 to 20,355, making it the sixth largest African-

American community in the nation (Glasco 1989). Part of this enormous growth can be attributed to the overall growth of Pittsburgh's population, as it became an industrial powerhouse. In 1909, a survey found that there were 85 Black-run businesses in the city (Glasco 1989). The number of social clubs and fraternal organizations grew to support the population. The strong culture of the community is reflected in three concert and symphony orchestras and many prominent literary societies. As World War I ensued, the factory and mill jobs from which African Americans were previously excluded became available. These new opportunities, combined with many new community institutions, "energized and transformed the community's social and cultural life," though it remained economically and politically hindered (Glasco 1989, 75).

The Heyday

The Great Southern Migration (1910-1930) marked a significant time in Pittsburgh's African-American community. This exodus of people from the deep south increased northern African-American populations by more than 500,000. Pittsburgh's African-American population increased from 25,000 to 55,000 due to newly opened jobs in the steel industry. The migrants brought a new wave of culture to the Hill District. Sala Udin, longtime Hill resident and its former city councilman, described life in the Hill District during its heyday in the 1940s and early 1950s, "...Especially in the summertime, it was like a Disneyland, there were always things happening; parades, people walking back and forth, dressed up" (quoted in Cooper and Nagoda 2014). Harlem Renaissance poet Claude McKay called the intersection of Wylie Avenue and Fullerton Street (Fig. 2.6) in the Hill "the crossroads of the world" (Glasco 1989).

New access to industry jobs during wartime increased prosperity in the Hill, creating a mix of incomes, and subsequently a mix of housing and businesses. Shops, clubs, restaurants,

and other businesses lined the two main business districts on Wylie and Centre Avenues. Centre Avenue continues today as the neighborhood's main business district. The community benefited from recreation centers and settlement houses such as The Hill House and the Centre Avenue YMCA. Hill residents supported two African-American baseball teams, the Pittsburgh Crawfords and the Homestead Grays, both of which earned a combined 13 Negro national championships and shared seven hall of fame members.



Figure 2.6: Wylie Avenue at Fullerton Street, c. 1945-1960. Photograph by Charles "Teenie" Harris. Courtesy of Carnegie Museum of Art.

The Hill attracted people of varying incomes and races, mostly because of its world-class entertainment scene. Laurence Glasco described the neighborhood at this time as “very racially diverse” (quoted in Cooper and Nagoda 2014). Noted jazz clubs included the Crawford Grill

(Fig. 2.7), Hurricane Lounge, New Granada Theatre, and the Musician's Club, all of which were located on Centre and Wylie Avenues. These clubs welcomed all races and were frequented by Whites. Regular performers in Hill District clubs included musicians such as Louis Armstrong and Duke Ellington, and singer Lena Horne. Up and coming musicians would spend time in these clubs as well, absorbing knowledge from these jazz greats. Thus, the Hill's clubs and cafes were influential in the evolution of American Jazz music.



Figure 2.7: Wylie Avenue businesses, including the Crawford Grill, c. 1947. Photograph by Charles "Teenie" Harris. Courtesy of Carnegie Museum of Art.



Figure 2.8: The Hill District before urban renewal. Courtesy of the Historical Society of Western Pennsylvania.



Figure 2.9: Logan Street in the Lower Hill District before demolition. Photograph by John A. Schrader. Courtesy of the Historical Society of Western Pennsylvania.

Glasco explained, “part of the Hill’s downfall was the success of its people” (Cooper and Nagoda 2014). The prosperity that local businesses brought to the Hill enabled residents to relocate to what were considered nicer neighborhoods in the city. This exodus of the middle and upper-middle classes created a chasm where the Hill’s population became predominantly low-income and some areas were labeled slums, a precursor to the urban renewal of the 50s and 60s (Cooper and Nagoda 2014).

The built environment of the Hill was undoubtedly significant in fostering the social cohesion of the community (Fig. 2.8-9). It acted as a “newcomer neighborhood,” welcoming

waves of African-American migrants to a new home in Pittsburgh (Fullilove 2004, 61). Sala Udin describes,

The sense of community and the buildings are related in an old area. The buildings were old, the streets were cobblestone and old, there were many small alleyways and people in those alleyways. The houses were very close together. There were small walkways that ran in between the alleyways that was really a playground. So, the physical condition of the buildings helped to create a sense of community. We all lived in similar conditions and had similar complaints about the wind whipping through the gaps between the frame and the window, and the holes in the walls and the leaking and the toilet fixtures that work sometimes and don't work sometimes. But that kind of common condition bound us together more as a community. I knew everybody on my block, and they knew me. They knew me on sight, and they knew all the children on sight, and my behavior changed when I entered the block. And so, I think there was a very strong sense of community (quoted in Fullilove 2004, 61).

Mindy Thompson Fullilove explains, "...the tight streets of the Hill were not a waste of territory, but the nidus for making essential relationships" (2004, 61). Udin's memories of growing up in the Hill tell of a neighborhood operating at a human scale. Lang writes, "Human scale is an attribute of the built environment. It is also an attribute of the social environment and the link between social and physical worlds" (1994, 256). Charles Abrams defines human scale as "that combination of qualities that gives man's works an appropriate relationship to man's size and feelings" (1971, 149). A consensus arises on this topic, posing that the scale of the built environment—the space between buildings; the size of buildings, sidewalks, and open spaces—

can influence the occupants of that environment. The intimate spaces created by the narrow, old streets of the Hill directly influenced the formation of a close-knit community (Fig. 2.10-12).



Figure 2.10: The community of the Hill District, c. 1940-50. Photograph by Charles "Teenie" Harris. Courtesy of Carnegie Museum of Art.



Figure 2.11: Children playing in a Hill District alley, c. 1952. Photograph by James Blair.

Courtesy of the Carnegie Museum of Art.



Figure 2.12: Parade in the Hill District, c. 1940s. Photograph by Charles "Teenie" Harris.

Courtesy of the Carnegie Museum of Art.

However, not everyone saw the value in the social intimacy created by the Hill's narrow alleyways. George Evans, a Pittsburgh City Councilman, explained, "The area is criss-crossed with streets running every which way, which absorb at least one-third of the area. These streets should all be vacated and a new street pattern overlaid. This would effect a saving of probably 100 acres now used for unnecessary streets" (1943, also quoted in Fullilove 2004, 61).

Blight and Urban Renewal

The early to mid-20th century brought much change to the world, and to American cities. Postwar attitudes greatly informed the direction cities would take for the future. This attitude of change and more importantly, of progress, was the impetus for the Housing Act of 1949 (Fullilove 2004). The first iteration of this legislation, aimed at eliminating slums, was introduced in 1937 by the Roosevelt administration. Subsequently, the city created the Pittsburgh Housing Authority in August 1937. In October 1938, the Housing Authority announced its first

low-income housing project, the Bedford Dwellings, which was the first stage of what would become a \$40 million city-county slum clearance project. In 1945, the Urban Redevelopment Authority was created to carry out urban renewal in blighted areas and exercise the power of eminent domain (Cooper and Nagoda 2014). Two years later, Pittsburgh financier and philanthropist Richard King Mellon announced plans for the redevelopment of 70 acres of the Lower Hill to create a “Pittsburgh Center,” which would include a sports arena accommodating 18,000, apartment housing, and a new street layout, among other improvements (Lorant 2000).

The Housing Act of 1949 empowered cities to reclaim land and clear it for redevelopment. This process began with identifying blighted areas. “Blighted” was often used to describe aging buildings whose value had decreased and were no longer profitable or useful. Other terms like “slum” and “ghetto” were used in a similar fashion to label undesirable areas and slate them for renewal (Fullilove 2004, 58). Next, the city developed plans for the blighted areas that determined new uses for the land. The redevelopment plans were then sent to regional and federal governments for approval and funding. Once the plans were approved, the city could use eminent domain to reclaim the land, often providing little compensation. Federal subsidies allowed cities to sell the land to developers for a fraction of its value. Developers then built new housing, offices, or civic buildings, usually for middle or upper-income people (Greer 1966). In some cases, developers built high-rise public housing, often replacing smaller-scale dwellings with much street activity in favor of large towers surrounded by un-programmed open space.

In the 1954 iteration of the Housing Act, urban renewal received a legal definition and became an official title for many slum clearance projects (Fullilove 2004). The Housing Act was designed to provide federal loans and grants to cities for various improvements. The end of World War II marked a new era of progress, with new cities for the future. Many American cities

wanted to clear aging, blighted areas, and declare new uses for the land. Densely populated, and in some cases overcrowded, low-income areas like as the Hill District were repeated victims of slum clearance programs. The unhealthy aspects of the neighborhood, like lack of plumbing and crowded tenements, dictated the public's perception; to many, there was no value in losing the neighborhood for the greater good. George Evans said, "The Hill District of Pittsburgh is probably one of the most outstanding examples in Pittsburgh of neighborhood deterioration... Approximately 90 per cent of the buildings in the area are sub-standard and have long outlived their usefulness, and so there would be no social loss if they were all destroyed" (1943).

Fullilove has studied the social and physical effects of urban renewal in American cities, specifically in the Hill District. Fullilove uses the example of Georges-Eugène Haussmann's 1853 Paris plan to illustrate how the altering of the city's built environment changed communities and neighborhoods. Before Haussmann, French authorities had been studying Rome for ways to solve Paris's crowded and unsanitary streets and neighborhoods. They envisioned broad streets connecting centers to accommodate the growing population and to split up crowded, dirty blocks of housing. Haussmann applied these ideas over the urban fabric of Paris, widening streets, digging sewers, and adding unifying street furniture to create a singular aesthetic. These plans literally tore up the city and displaced the poorest residents. The poor were pushed out to the city's periphery (Fullilove 2004).

To some, the overhauling urban renewal of Paris was immense progress; to others, destruction and upheaval. Urbanist Michel Cantal Dupart describes a neighborhood in Paris fractured by the demolition of the Church of Saint Andre des Arts, the parish for a riverside neighborhood stretching from Pont Neuf to Pont Saint Michel. The construction of Haussmann's Boulevard Saint Michel closed the church and divided residents between two other parishes, in

two different *arrondissements*. Dupart explains, “Though it has been more than a century since the demolition of the church, the neighborhood has remained disorganized. The village never regained its authenticity. It had lost an essential organ” (quoted in Fullilove 2004, 56).

Physical upheaval eventually turned to social upheaval. Displaced residents pushed out to the periphery by the renovations became fed up with the French government. Driven to Paris’s outskirts, disgruntled residents commiserated about the government’s blatant disregard for their communities (Gould 1995). Soon the Paris Commune staged a revolution and declared a new democracy. Fullilove uses the story of Haussmann and the Paris Commune to illustrate the deep effects of uprooting a physical neighborhood and a social community in the name of urban renewal (2004).

In the beginning, Hill residents weren’t opposed to all redevelopment (Glasco quoted in Cooper and Nagoda 2014). Residents wanted the city to build low-income housing in the Hill, improve unsanitary conditions, and improve traffic patterns. In August 1951, a car struck and killed a child on Webster Avenue. This event sparked protests and gatherings of angry residents demanding change and improved streets with traffic lights. The local African-American newspaper, *The Pittsburgh Courier*, began documenting the unrest in the Hill. Charles “Teenie” Harris, a *Courier* photographer, documented the Hill District from the 1930s through the 1970s, often countering the negative stereotypes of African Americans in the press.

The Allegheny Conference on Community Development was formed to revive Downtown, which was seen as the key to the city’s prosperity (Fig. 2.13). This committee, primarily made up of white business leaders such as Richard King Mellon, publicized the Hill as slums and promoted the plans for redevelopment to the public. The committee, along with the city’s mayor, David Lawrence, wanted Pittsburgh to be known for more than just steel

production and dirty manufacturing. The Hill redevelopment, including the subsequent construction of a large civic complex, was an integral part of the postwar Pittsburgh Renaissance era, led by Lawrence.

Mellon carried great influence with Mayor David Lawrence and the Allegheny Conference on Community Development, as he owned or held stock in many Pittsburgh companies, most notable Mellon Bank. When the Allegheny Conference was considering potential locations for the new civic auditorium, the mayor's first choice was in Highland Park, a few miles east of downtown. This area was predominantly occupied by middle and upper-class residents who signed a petition and attended meetings protesting the auditorium project. Highland Park was also home to Robert King's estate, who was Mellon's uncle. Lawrence gave up on the Highland Park site because he needed Mellon on his side. He then turned to the Lower Hill, which was initially rejected because of its high density and relocation issues. The Lower Hill became the future site of the new civic auditorium project and was met with less powerful opposition. The city officials found numerous reasons to demolish it, citing building inspection reports in the early 1950s that rated 681 of the 901 homes as substandard (Fitzpatrick 2000).



Figure 2.13: Construction of Chatham Center, part of Pittsburgh’s renaissance redevelopment, with Civic Arena in view, early 1960s. Photograph by Harold Corsini.

In September 1955, the federal government approved the Lower Hill redevelopment plan, allocating \$17.4 million in loans and grants. The plan called for the clearing of 95 acres, with the first 1,300 structures set to be demolished by June 1956. The 95 acres were divided with 20 acres set aside for the Civic Arena and its parking, 10 acres for new apartment housing, 20 acres for commercial development, 10 acres for cultural development, and 32 acres for a new street layout (Cooper and Nagoda 2014). Redevelopment displaced over 8,000 residents; 1,239 African-American families and 312 White families were displaced in the demolition of the Lower Hill. Residents forced to relocate received little or no compensation; of the families forced to move, 35% relocated to public housing, 31% to private rentals, and 8% purchased homes (1977). URA official Irving Rubinstein described relocation as “Chaos. It was absolute chaos” (quoted in Fitzpatrick 2000). Most forced to relocate moved to neighborhoods with more residents of their

own race, perpetuating the city's segregation problems. Dan Fitzpatrick reported, "By 1960, Pittsburgh was one of the most segregated big cities in America" (2000). Sala Udin described the upheaval, adding, "...it doesn't really describe the dissolving of the glue that kept the community together; the destruction of the memory that gave the community a sense of family; the trauma of destroying a culture and a community" (quoted in Cooper and Nagoda 2014).

Aftermath of Urban Renewal

The legacy of the Housing Act is still apparent today in areas like the Hill District, which is still experiencing the effects of urban renewal. Marc Weiss summarizes these effects, "Urban renewal agencies in many cities demolished whole communities inhabited by low income people in order to provide land for private development of office buildings, sports arenas, hotels, trade centers, and high income luxury buildings" (quoted in Fullilove 2004, 59). This is exemplified in the Lower Hill, which was cleared of homes, businesses, and social institutions to make room for the new Civic Arena.

After the dust settled, the Hill's commercial corridor was destroyed. The rapid decline in population and relocation or closure of many businesses led to more closures or relocations. The Hill housed 55,000 people at its peak. By the end of urban renewal, it was 10,000 (Cooper and Nagoda 2014). The community now lacked vital businesses, and was even left without a grocery store, causing remaining residents to travel elsewhere for the essentials. Hill resident Arden Ann Harrell, born in 1937, recalls a neighborhood that fulfilled community needs— "clothing, shoes, food, and fun" (Klein 2017). Harrell, who still resides in her childhood home on Kirkpatrick Street, notes, "There are blocks and blocks of streets where everything has been torn down" (quoted in Klein 2017).



Figure 2.14: Wylie and Fullerton intersection looking southwest toward demolition, c. 1956-1959. Photograph by Charles "Teenie" Harris. Courtesy of Carnegie Museum of Art.

The Civic Arena promised employment opportunities for African-American Hill District residents; however, only two security guards, five ushers, and “some” janitors were hired (Cooper and Nagoda 2014). A new cultural complex was envisioned for the rest of the land cleared in the Lower Hill, but was ultimately never realized. The leftover land sat vacant or became parking lots. The cultural district project produced a civic arena, an apartment building, Crosstown Boulevard, and Chatham Center, an office building complex. The Heinz family built a new concert hall downtown, eliminating the need for further cultural development in the Lower Hill. A 1968 editorial in *The Pittsburgh Press* criticized Lawrence and others, stating, “The men of the Renaissance have been unable to produce anything but a crop of weeds on 9.2 acres of

prime public land next to the Civic Arena” (quoted in Fitzpatrick 2000). This land has been used for parking since demolition.



Figure 2.15: Billboard near Crawford St. and Centre Ave. 1969. Photograph by Charles "Teenie" Harris. Courtesy of Carnegie Museum of Art.

Pittsburgh’s urban renewal in the Hill ultimately resulted in the removal of 1,300 buildings, 413 businesses, and 8,000 people (Fitzpatrick 2000). Citizen groups formed in the Hill to combat large-scale urban renewal and advocated for anti-poverty programs, reuse of older buildings and new, affordable housing for low-income residents. The Citizens Committee for Hill District Renewal put up a billboard at the intersection of Centre Avenue and Crawford Street (Fig. 2.15) reading, “Attention: City Hall and U.R.A., NO Redevelopment Beyond This Point” (Fitzpatrick 2000).

Conclusion

The Hill District's urban fabric was formed at a human scale, which facilitated social engagement in the community and created a rich social fabric. This can be seen from residents' recollections and photographs of the neighborhood in its heyday, which depict life in its streets. The urban fabric supported a diversity of businesses and everyday services that were vital to residents, and largely acted as the social glue that held the community together. Human scale will be further defined and explored in the following chapter, as well as its importance and value to the community. A discussion on the physical manifestations of human scale will follow.

CHAPTER 3

HUMAN SCALE AND SOCIABILITY

The death of human scale

Sala Udin's account of life in the Hill describes a built environment in human scale. His description of the narrow alleys of the Lower Hill, where children played and neighbors knew and cared for each other, describes a sense of community directly influenced by the physical environment. This begins a discussion of how the scale of the built environment influences the sociability of a place, and eventually leads to a proposal for the reimplementation of human scale. Human scale will be the primary focus in this chapter, as it is the main altered physical attribute of the neighborhoods that make up the Hill District, most significant of which was the Lower Hill. To understand the thinking behind urban renewal in the postwar era and the resulting shift in scale, one must explore the precedent theories of modernist urban planning.

In her seminal work on the failures of modern city planning, *The Death and Life of Great American Cities*, Jane Jacobs explains that Ebenezer Howard's Garden City model and later, Le Corbusier's Radiant City and the City Beautiful movement, were all precursors to the destruction in American cities caused by mid-century urban renewal projects (1961).

Ebenezer Howard was inspired to design his Garden City after seeing the derelict slums of late 19th-century London. The Garden City was an alternative to the city, as he knew it. With a maximum population of 30,000 people and ample green space, it would solve the city's problems of overcrowding and lack of open space. Out of this model came the planned community of

Radburn, New Jersey, and Green Belt towns, and the idea that towns should be self-contained and insular (Jacobs 1961).

Le Corbusier's Radiant City channeled Howard's Garden City principle of providing green space for people, but made it viable for the city by densifying small Garden City towns into colossal apartment buildings. Le Corbusier was building a city in a park, with 1,200 people per acre and 95% open space, dotted with towering skyscrapers as housing (Jacobs 1961). His vision prioritized the future; he wanted to build super-highways for the automobile and envisioned a "special elevated motor track between the majestic sky-scrappers" (quoted in Jacobs 1961, 21). This vision became reality in many U.S. cities, where new highways moved thousands efficiently through and around the city, rather than having to navigate 'wasteful' streets (Evans 1943). He didn't see the value in frequent intersections, declaring, "cross-roads are an enemy to traffic" (quoted in Jacobs 1961, 23).

The City Beautiful movement introduced the idea of building grand monuments and civic centers. This was built off the Garden City's compartmentalized usage ideas, erecting isolated civic or cultural centers in many American cities. These monumental centers disrupted scale and lacked context in their urban environments, providing an uninviting and stark landscape for pedestrians. Many centers became unpopular and deserted on an everyday basis (Jacobs 1961).

These utopian models also promoted the idea that planning should be authoritarian and paternalistic, rather than a partnership with residents. Planners and city officials thought that providing adequate housing would solve most city problems, failing to recognize culture as the driving force of many of the communities they were trying to fix. Architects and town and regional planners, the latter of which Jacobs classifies as "Decentrists," were primarily tackling the enormous task of city planning in the late 19th and early 20th centuries (1961, 20). The

Decentrists aimed to disperse residents of overcrowded cities into smaller self-contained towns, essentially thinning-out the city. The Decentrists' impact was seen mostly in their influence on city planning and legislation, rather than directly implementing their model towns. They generally thought the street was not a suitable environment for people, and by and large wanted to get people off the streets. In *The Culture of Cities*, Lewis Mumford referred to midtown Manhattan as "solidified chaos" (quoted in Jacobs 1961, 21). Jacobs explains that Decentrists also thought "frequent streets are wasteful," advocated for superblocks, segregated usage, and self-contained planned communities (1961, 20). Overall, for the Decentrists, the city's bad qualities outweighed the good.

Jacobs argues that the qualities Modernists argued against were in fact the most desirable. She celebrated people lingering in the streets and interacting with one another. She advocated for mixed-use buildings with shops and businesses on the ground level and apartments above. A neighborhood also needed a diversity of households and incomes. She argued that a diverse population puts people on the streets at virtually all times of the day, providing an "informal policing" of the neighborhood (Tonkiss 2005, 21). Fran Tonkiss explains this practice of policing by residents is not dependent on tribalism or mutual dependence, but is prompted by the sharing of space with "familiar strangers" (2005, 21). In the case of the Hill District, the *human* scale of the built environment, essentially Jacobs' qualities described above, is the primary means for social interaction and subsequently, "informal policing" (Tonkiss 2005, 21). The urban qualities outlined by Jacobs, and portrayed by Hill resident Sala Udin, describe a sociable urban environment that is significantly influenced by the scale and nature of the buildings, streets, and sidewalks.

However, despite critics like Jane Jacobs, Modernist thinking infiltrated American city planning and heavily influenced postwar urban renewal. National housing and home financing legislation was directly influenced by this new vision, which primarily focused on the poverty and unsanitary conditions in urban slums. The Housing Act of 1949, and later 1954, enabled city governments to clean up the bad neighborhoods, that urbanists like Lewis Mumford and Ebenezer Howard had railed against, by providing funding and tax abatements to attract private developers. Often, cities would utilize eminent domain to tear down slum neighborhoods and sell the land at a subsidized price to developers (Fullilove 2004). Like in Pittsburgh, many cities built large civic complexes or even luxury apartments in place of the slums. There were no legal provisions in place to require a unit-by-unit replacement of demolished housing in the process of redevelopment. Although the city of Pittsburgh did construct public housing with federal funding from the Housing Acts, it was not typically located in the same area, causing residents to be uprooted to a new environment (Fullilove 2004).

The lack of foresight in the initial Housing Act legislation led to cities using federal funding to redevelop slums into areas for the middle and upper classes (Fullilove 2004). City officials' desire to move the poor and the minorities out of view and into isolated areas of public housing, combined with the contemporary ideas of Modernism, prompted many cities to demolish entire neighborhoods in the name of progress and construct large, modern housing or civic buildings that were thought to be the pinnacle of design.

Not everyone in Pittsburgh saw these changes as improvements. In the early 1960s a group of local architects criticized the city's plans, stating they refused to ignore "...our city being defaced by thoughtless buildings and projects... The inane things that have all but ruined this place have been unchallenged much too long" (quoted in Fitzpatrick 2000). Beth Dunlop,

who wrote about urban renewal for *The Pittsburgh Press* in the 1960s and 1970s, described Modernist design as “architecture for everybody and not just for an elite, [but] it became something much different. It was subverted. The problem was, it didn't work because really basic notions of how human beings perceive and use space were completely misapprehended” (quoted in Fitzpatrick 2000).

Scale suffered a series of attacks in the late 19th and early 20th century at the hands of many architects and planners. While the Decentrists wanted to take people out of the city and into self-contained towns, Centralists like Le Corbusier wanted to pack them into high towers surrounded by un-programmed, open, grassy space (Lang 1994). Both approaches dismantled the human scale of dense, mid-rise neighborhoods like the Hill District, where there were small spaces for meeting neighbors and interaction with “familiar strangers” (Tonkiss 2005, 21). Those orchestrating these utopian cities or towns overlooked the human scale that created opportunities for social interaction and in turn effected a sense of community.

Determinism, Probablism, and Potentialism

There has been criticism of Jane Jacobs’ work because of her assertion that the design of the built environment could *determine* the diversity of social life, known as determinism. Sociologist Herbert Gans characterized her ideas in *The Death and Life of Great American Cities* as participating in the “fallacy of environmental determinism,” which has been generally accepted as false (quoted in Appleyard 1981, 4). Probablism is the theory that certain behavioral outcomes are probable in certain physical settings. Potentialism is the theory that a given physical setting has the potential to produce certain behavioral outcomes. For the purposes of this thesis, the physical conditions of the street can create opportunities for life on the street. This doesn’t mean these conditions will guarantee street life, as the attitudes of the community, as

well as other factors present, will also influence their propensity to engage in neighboring (Mehta 2013).

Human Scale and Social Capital

Why do we need human scale? As discussed in the previous section, trends in urban planning and architecture moved away from what was considered outdated and obsolete, old cities that were primarily built for people traveling on foot. As technology developed, cities started to be built for cars rather than people. This shift drastically influenced the built environment, as many urban centers transformed to accommodate highways and wider roads. The dense, mid-rise neighborhood with narrow streets and short distances was discarded in favor of the future of zooming cars on freeways and gratuitous open space (Corbusier 1973). Images of older neighborhoods like the Lower Hill (Fig. 3.1) show a stark contrast against images of projects like Pruitt-Igoe (Fig. 3.2). In these two examples, one can identify a shift in scale of architecture and public space. In the Lower Hill, a neighborhood milling with people day and night, greeting each other; in contrast, Pruitt-Igoe's open spaces were generally devoid of social activity and lacked the infrastructure to cultivate this kind of activity.



Figure 3.1: Aerial image of Lower Hill District, c. 1935. Photo courtesy of the Historical Society of Western Pennsylvania.

In an effort to provide better housing, which some may argue it did, the designers effectively removed all aspects of a neighborhood that provided the crucial social interaction residents needed. This illustrated a blatant misunderstanding of which elements of the built environment encourage social interaction. Sidney Brower includes a specific arrangement of these elements as a property of community-generating neighborhoods. “Opportunities for casual meeting are greater when houses are closer to one another and to the road; domestic activities are brought out of the house onto front porches and into yards; groups of residents use the same path to reach their front doors; and these doors are visible from other houses” (Brower 2011, 119). A provision of community facilities is another component of encouraging social interaction.

Brower adds, “Neighborhood stores, because they serve everyday needs and are open to all, are thought of as ‘public’ facilities—more public, for example, than schools, museums, and city offices” (2011, 117).



Figure 3.2: Pruitt-Igoe public housing complex in St. Louis, MO. Photo courtesy of the US Geological Survey.

The built environment of the Hill District provided the spaces for the types of social interaction that fostered a sense of community. Urbanists like Jane Jacobs saw that interactions on the street were dependent on street layout, architectural features, and sidewalk conditions. Jacobs and others have asserted that specific features of the built environment may “enable or impede various kinds of social interactions” (Eicher 2011, 121). Jacobs was one of the first

urbanists to point out that the opportunities for chance encounters were dependent on “structural elements of the built environment” (Eicher 2011, 122). Observation of the Hill District’s built environment during its heyday reveals a network of neighborhoods that operated at a *human scale*. Archival photography indicates narrow side streets, alleys, and dense row houses with stoops (Fig. 3.3). The central business districts of Wylie and Centre Avenues, were lined with local, small businesses, often with apartments or offices above (Figs. 3.4-5). This mix of uses brought people to the streets and created opportunities for chance meetings.



Figure 3.3: Hill District residential street scene, c.1950. Photograph by Charles "Teenie" Harris.

Courtesy of Carnegie Museum of Art.



Figure 3.4: Lower Hill businesses. Photo looking west on Fifth Avenue at Diamond Street, c.1956. Photo courtesy of the Historical Society of Western Pennsylvania.



Figure 3.5: Businesses seen from approximately 1801 Centre Avenue. Photo taken from the northwest corner of the Centre and Heldman Avenue intersection looking east, July 27, 1942.

Human scale is defined in literature both qualitatively and quantitatively; some approach it with physical dimensions in mind, while others use the term to describe an urban environment possessing certain qualities like walkability, activity, density, intensity of land use, or visual variety (Alawadi 2018). Khaled Alawadi explains that human scale is not necessarily defined by physical scale only; it's the scale at which people can carry out everyday activities, promoting sociability (2018). For the purposes of this thesis, human scale will be defined as the physical attributes of the built environment that support the everyday activities of people and therefore contribute to sociability of a place. Alawadi has studied various neighborhoods in Abu Dhabi and Dubai that operate at the human scale, which he calls the “quotidian landscape,” (Fig. 3.6) but are being pushed out by architecture at a larger, less inviting scale (Alawadi 2018, 28). He describes how these cities in the early 1970s and 1980s were built as human-scale, until the 1990s brought “mega-urbanism” with skyscrapers (Fig. 3.7) and other imposing architecture

(Alawadi 2018, 44). To Alawadi, these human-scale urban environments resulted in a “generous, integrated urban space where cultures congregated and separated based on daily itineraries and rhythms” (Alawadi 2018, 20). This social and cultural integration was possible because of diverse land use, high permeability, density, and compactness that gave residents meaningful access to their environment. Alawadi says this ease of access, along with density and mixed-use, promoted a “dynamic, inclusive landscape that was open to everyone and facilitated and accommodated everyday encounters with exposure to strangers and acquaintances” (Alawadi 2018, 20).



Figure 3.6: Alawadi's "quotidian landscape," where everyday activity takes place. Image courtesy of National Pavilion UAE - la Biennale di Venezia.



Figure 3.7: Dubai's human scale contrasted with "mega-urbanism." Image courtesy of National Pavilion UAE - la Biennale di Venezia.

Connections can certainly be made between Alawadi's description of the human scale neighborhoods in the UAE and Pittsburgh's Hill District. Although there are many differences between the two, culturally and geographically, the nature of human-scale environments and their ability to foster sociability amongst people remains constant. The human scale discussed here—reflected in alleyways, streets, and open space—is space that, through its physical nature, creates opportunities for sociability and trust-building amongst its everyday users. The social capital created by human-scale built environments has increasing value in today's world where much of the communication between people is virtual. The value of physical, face-to-face socialization cannot be ignored or replaced. This value can be seen in communities, such as the

Hill, whose strong social cohesion could be attributed, at least partly, to their human-scale built environments.

The street as the social expression of human scale

This thesis will primarily focus on the street as an element of the built environment that acts as the primary setting for social interaction in the public realm (Mehta 2013). To argue the value of social interaction on streets in the Hill, the quantitative and qualitative aspects of the street must be examined.

When studying how people saw the city in their mind, Kevin Lynch categorized the city into several typologies: path, edge, node, district, and landmark (1960). Lynch explains that people saw the *path* as the predominant element when imagining the layout of a city. Paths, or streets, may be the main image in a person's mind for many reasons. Lynch cites regular travel, access, concentration of use or activity, spatial variation, distinctive facades or planting, and visual or spatial continuity, as the more memorable qualities of a given path. Vikas Mehta adds, "Streets are powerful tools of urban design and consequently of understanding and making the city legible" (2013, 1). Essentially, people use the path, or streets, to read and understand the city. Paths are generally used for circulation and orientation in an urban environment, but they also provide the stage for sociability in the public realm.

The street and the sidewalk act as a meeting place. People are drawn to a street because of its commercial or institutional amenities. Jane Jacobs stressed the importance of mixing uses of the street, drawing a diverse group of people who establish informal contacts over time. Mehta explains, "...the neighborhood commercial street provides an open neutral territory that is a key quality of public space" (2013, 10). The traditional American image of Main Street represents the stage for daily social activity such as trips to shops or entities like the bank, butcher, grocery

store, clothing stores, hardware, and millinery (Rifkind 1977). Main Street acted as public gathering space night and day, where people would meet in saloons, bars, or cafes. Rifkind notes, “The shop, clubhouse, and theater were powerful Main Street magnets” (1977, 187). Main street has ties to the straight, broad military avenues of centuries past, and has evolved from the wide boulevard used for business of the state; however, it still acts as the face of the community, rather than the government. Mehta describes it as “the pulse of the common populace” (2013, 17). The main commercial street holds a mix of businesses and other uses, and is the core of the town or urban neighborhood, as it expresses the traditional values of the place. Shopkeepers know people and neighbors see each other, and “social exchange is equally valued with economic transaction” (Mehta 2013, 17). Jacobs is noted for her observation of the conditions necessary for producing street activity. She argues that a mix of primary uses, intensity, permeability of urban form, and a diversity of building types, ages, and sizes are needed to encourage street life (Jacobs 1961, as cited in Montgomery 1998). Jacobs and Gehl argue that the success of urban places is greatly determined by its social life (Montgomery 1998). Peter Buchanan adds, “Urban design is essentially about place-making, where places are not just a specific space, but all the activities and events which made it possible” (quoted in Montgomery 1998).

The street defined

The street as a physical entity is defined by Rapoport (1987) as “the more or less narrow, linear space lined by buildings found in settlements and used for circulation and, sometimes, other activities” (quoted in Mehta 2013, 11-12). Jukes (1990) offers another definition in terms of sociability, defining the street as “a central metropolitan thoroughfare, an arena where *strangers* encounter one another, come face to face with the size and heterogeneity of urban life”

(quoted in Mehta 2013, 12). Mehta summarizes Gutman's (1978) seven common social and physical elements of streets, appearing since the Renaissance: the street is social space and its structure reveals social and cultural motives; it is three-dimensional, as the surrounding buildings contain and define the two-dimensional surface; it acts as a link between buildings and people, facilitating communication and interaction; it is public and accessible, with some exceptions; it functions in two parts, one for the movement of people, and the other for the movement of animals or vehicles; it acts as a connector, but also a bounded space in of itself; it is an intermediate space between buildings and other large-scale spaces such as plazas, squares, or parks (2013). Kostoff (1992) points out the political significance of the street, explaining that it delineates shared, public space from individual, private space, therefore structuring the community while revealing the city's inter-workings, and acting as the backdrop to its everyday activities (Mehta 2013). In this vein, the street has historically been the grounds for political and social expression. Fyfe (1998) explains, "Streets are the terrain of social encounters and political protest, sites of domination and resistance, places of pleasure and anxiety" (quoted in Mehta 2013, 12-13). The street is defined in the literature not only as a physical entity, but perhaps more importantly as a means of human expression. The street acts as the physical manifestation of social interaction in the built environment. For the purposes of this thesis, the street is physically defined as the space between buildings where sociability occurs, including the sidewalks.

Evolution of the street

Images of the street vary from bustling main streets to narrow, organic streets in medieval towns. These images are derived from how people use the street in their everyday routines. Medieval streets are often romanticized for their organic nature, often meandering, with short

views offering ambiguity and surprise; this kind of street is where “one feels at ease in a space where the gaze cannot be lost in infinity” (Sitte 1965, 60). They are characterized by a sense of enclosure, seemingly carved out of a mass of buildings with varying and interesting facades (Figs. 3.8-9). There are usually many windows and doors facing the street, as well as balconies and elements partially covering the street. These architectural features contribute to a sense of enclosure (Mehta 2013). These high-density streets are pedestrian-oriented, reflected by the technology of the time in which they were built. Mehta explains, “the contained space of the street compels passive and active social engagement with neighbors and even strangers” (2013, 14).



Figure 3.8: Sense of enclosure in Stockholm, Sweden. Photo by author.



Figure 3.9: Sense of enclosure in Stockholm, Sweden. Photo by author.

In the 19th century, the promenading street became the trend in urban design. This street was a steep departure from the narrow medieval street, as it takes its form as a wide, grand boulevard or avenue. The primary purpose of this street was to connect important destinations, as seen in Haussmann's renovation of Paris (Fig. 3.10), cutting through the existing dense urban fabric. It was designed to move people or vehicles to and from these destinations. It also functioned as grounds for political, economic, and social processes of the state, and represented the power of the state over the individual (Mehta 2013). The street was no longer built for or serving the individual. In 1867 Lacrai announced the demise of the traditional street: "All is levelled, all is effaced, the types have disappeared, the characters have been dulled...The street

no longer exists in Paris, and the street once dead, it is the reign of the boulevard and advent of the grand arteries” (quoted in Jukes 1990, 72). The inception of this street model announced the arrival of a new urban ideology, effectively rejecting the human scale of the old street.



Figure 3.10: Grand promenade in Paris. Image from Apic/Getty Images.

The Modernists furthered this new vision of the street in the 20th century. Their idea of the street centered on efficiency. The street was reduced to a mere conduit for movement and nothing more. This required more space and no impediments to traffic, which resulted in wide, stark roads devoid of humanity, or expressways that circumvented neighborhoods (Fig. 3.11). This ideal was realized most significantly in the North American highway, a form of street dedicated solely to efficient movement (Mehta 2013). As previously discussed, the clearing of space to make way for many highways resulted in mass removal of the traditional urban fabric, the antithesis to efficiency in Modernists’ eyes. This form of street, highway or otherwise, was no longer bound by the form of buildings nor possessed any sense of enclosure, which might

bring people together. These carefully engineered streets and the open spaces around them failed to attract people. While they might have seemed brighter and orderly, they did not contain the elements that encouraged social behavior or provide reasons for people to gather.



Figure 3.11: Expressway circling a public housing project in New York City. Photo from <http://lifeedited.com/killing-le-corbusiers-beloved-parking-spaces/>.

The kinds of streets described in the Hill District acted as “the living room of the neighborhood” and a place for frequent encounters between neighbors (Mehta 2013, 17). Mehta categorizes these as “communal streets,” citing them as the key site for recreation (2013, 16). The street was home to interaction between neighbors and hosted playtime for neighborhood children. Because of this contact and intimacy, a general sense of trust was present among neighbors, increasing social cohesion. There were always what Jane Jacobs called “eyes on the street,” as neighbors looked out for each other’s’ best interest. Residents could participate in street life via windows, balconies, stoops, and porches. Businesses and other institutions on a

communal street could meet the daily needs of residents, providing the goods, amenities, and services (Fig. 3.12). The street provided access to commerce and other services, while acting as the stage for informal social interactions.



Figure 3.12: Hudson Street in Manhattan's West Village, August 2009. Photo by Michael Minn.

Criteria for a social street

Mehta defines sociable streets as “streets that support active and passive activities and behaviors throughout most of the day and week” (2013, 23). Mehta’s definition is independent of physical form. In this thesis, physical form will be taken into account, as well as activity and behavior.

Throughout time, the elements of successfully sociable streets, and those that are not, can be observed from the images described in the previous section. These elements work together to create a comfortable, inviting experience for people and promote opportunities for meeting and

interaction, which over time improve quality of life in communities. These features ultimately describe a street in *human scale*, as this term is defined as the qualitative and quantitative physical elements of the built environment that can provide social benefits. Human-scale built environments are the result of design that takes the needs and preferences of people, specifically pedestrians, into consideration. Sociability is thus a byproduct of the human-scale built environment. Some elements of a human-scale and sociable street include **safety, spatial definition and sense of enclosure, access, visual interest and aesthetic appeal, and comfort**. This thesis will attempt to compile the criteria for a human-scale, sociable street in this section.

Safety

In Donald Appleyard's seminal work *Livable Streets*, he describes the effects of traffic on sociability, studying three residential streets in San Francisco (1981). Overall, Appleyard paints traffic as the enemy to social life. He describes various solutions to traffic over time, citing the Garden City movement and Modernism's push to isolate people from busy streets. He agrees with Jacobs in her assertion that social activity made streets safe, and creating low-density neighborhoods with low-traffic streets, such as contemporary suburban neighborhoods, was not the answer. Through his survey of residents, he found that people had three times as many local friends and twice as many acquaintances on streets with the least amount of traffic, which was about 2,000 cars per day with an average of 200 cars during a peak hour (Fig. 3.12). A medium street saw an average of 8,000 cars per day and a heavily trafficked street saw an average of 16,000 cars per day. Personal contacts across the street were much rarer on heavy streets. Appleyard explains that the favorable conditions of a low-traffic street retain residents, especially those with children. The presence of children on a street indicates safety and often leads to more social interaction between neighbors. Conversely, on a heavily traveled street,

people are generally discouraged from crossing and interacting with each other due to lack of safety. In the study, residents were asked to draw their perception of their own personal territory around their house or apartment (Fig. 3.13). Their sense of personal territory included the actual street in the light-traffic area. On medium and heavy traffic streets, personal territory was contained to the immediate area around the residence or even just to the individual unit. This part of the study demonstrated the restrictiveness of boundaries on the three streets. Residents of the light-traffic street perceived boundaries as more permeable, whereas boundaries in the heavy-traffic area were more solid (Appleyard 1981). Appleyard explains, “This pattern of territorial space corresponds to the pattern of social use” (1981, 24).

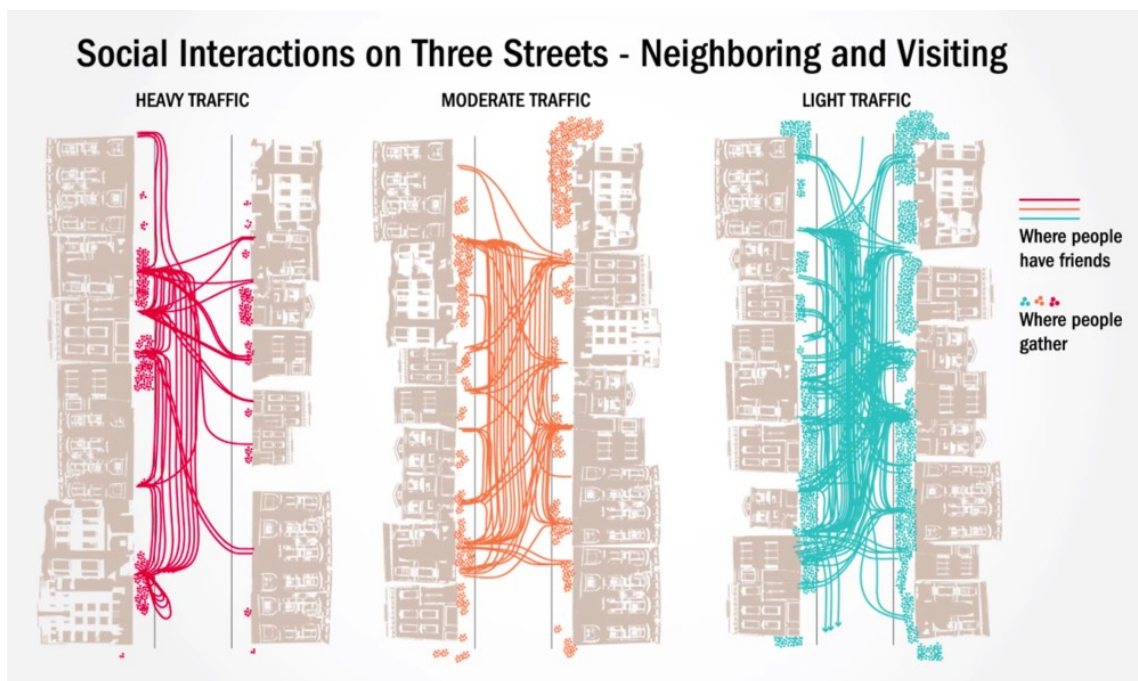


Figure 3.12: Diagram adapted from Donald Appleyard's image mapping in his study of traffic's effects on street life. Image from <https://kottke.org/19/01/creating-livable-city-streets>.

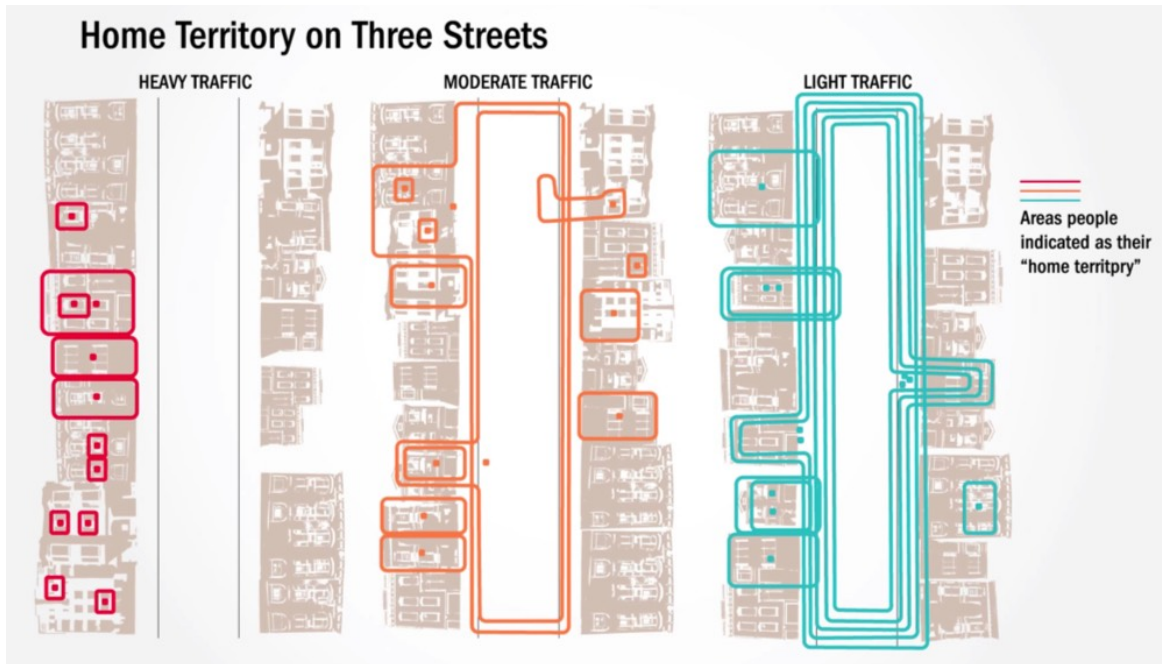


Figure 3.13: Diagram adapted from Donald Appleyard's image mapping in his study of traffic's effects on street life. Image from kottke.org.

The results of this study support the idea that pedestrian safety influences social life on residential streets and should be counted as a criterion for sociable, and thus human-scale streets, both residential and otherwise. Street safety may be manifested in various design recommendations such as wider sidewalk widths, narrower streets, and traffic-calming infrastructure like speed bumps, raised crosswalks, traffic islands, and rumble strips. Appleyard explains narrowing the street could include adding parking, planted strips and trees, play spaces, or widening sidewalks (Fig. 3.14) (1981).



Figure 3.14: Illustration of a raised crosswalk (NACTO 2015).

According to Maslow's hierarchy of human needs, safety is only second to physiological needs. Mehta explains that safety on the street is determined by physical conditions and maintenance of the environment, the layout of streets and spaces, land use, modifications made to the environment, and the presence or absence of people and their activities (2013). Several street characteristics and amenities can influence the perception of safety on a residential street, including the personalization and maintenance of property, such as lawn maintenance, outdoor décor, and other signs of ownership; conversely, property in disrepair may signify unsafe conditions, as the presence of other people is not felt. On commercial streets, Jacobs (1961) explained that bars, clubs, restaurants, and stores acts as basic surveillance on the street, which Oldenburg (1991) later referred to as third places (as cited in Mehta 2013). Mehta concludes that

occupancy, which depends on environmental and physical comfort, along with the number and type of businesses, is the key to perceiving safety on the street.

Spatial definition and sense of enclosure

As previously discussed, the medieval street is still cherished today because of its feeling of enclosure and intimacy created by a continuous wall of building facades (Mehta 2013). Victor Dover explains that spatial enclosure “results from the arrangement of architecture and trees in a way that forms a recognizable outdoor room, in which the ‘walls’ of the room are the facades of the buildings and/or column-like trunks of trees, and the ‘floor’ is the surface of the sidewalks and roadway” (2014, 36). The proportional relationship between building height and street width has been studied to determine what is most appealing to people. Dover asserts that this ratio and the continuity of “streetwalls” are the primary factors in establishing sense of place and street character (2014). Sense of enclosure is felt most when the “streetwall,” or mass of building facades is a solid, continuous form. Campoli adds, “A street is enclosed, and hence more comfortable in terms of scale, if its edges are made clear and consistent by buildings along the way” (2012, 31). Street trees can be used to express enclosure in the absence of continuous buildings (Dover and Massengale 2014).

East 70th Street between Park and Lexington Avenue in Manhattan’s Upper East Side possesses these qualities due to its building to street ratio. The street and sidewalks are 60 feet across, like most of Manhattan’s east-west streets. Most buildings on the street are 4.5-5 stories high. This creates a 1:1 building height to street width ratio, in which people feel comfortable (Dover and Massengale 2014). The streets trees and parked cars act as barriers between pedestrians and traffic. Street trees that are uniformly spaced also work to create visual order, allowing the viewer to judge distances.

There is debate on which ratios are ideal, with many agreeing that ratios between 1:1 to 1:3 are most comfortable (Jacobs 1993, Hedman and Jaszewski 1984). Many Italian piazzas are 1:3, where the horizontal plane is three times as wide as the surrounding vertical elements. Many agree ratios beyond 1:5 or 1:6 begin to lose their sense of enclosure (Dover and Massengale 2014, Jacobs 1993). Conversely, ratios smaller than 1:1 begin to feel claustrophobic and confining (Hedman and Jaszewski 1984). Richard Hedman explains the importance of this ratio to spatial definition, pointing to the human field of vision as his guide. Different building height to street width ratios offers different proportions of one's range of vision, which controls the perception of street space and scale. This means, depending on building height, the human range of vision may see more space above buildings (sky), resulting in an uncontained view of the street, which fails to effectively define the space. Hedman illustrates this point using a 1:4 building height to street width ratio, explaining that this ratio offers three times as much sky as wall within the normal range of vision; a street of these proportions is not strongly defined. He asserts that a 1:2 ratio (Fig. 3. 15) is the minimum ratio of height to width for good spatial definition because it offers an equal amount of sky and wall within the human field of vision.

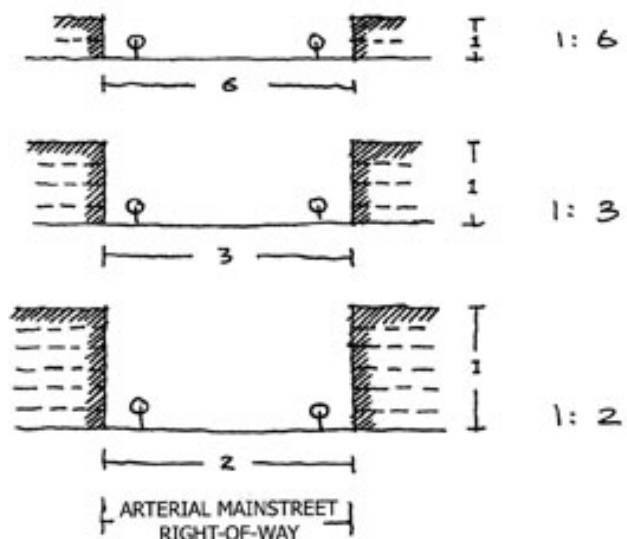


Figure 3.15: Diagram of low to high building height to street width ratios. Image courtesy of the City of Ottawa.

Hans Blumenfeld, building on the work of H. Maertens, studied spatial definition through developing a ratio for the human scale (Jacobs 1993). Like Gehl, they were concerned with the distance at which people can recognize faces and facial expressions can be seen. They used these distances (72 feet and 48 feet, respectively), along with the angle of the clear human field of vision (27 degrees) to establish a human scale ratio. They concluded that a 1:2 ratio, where the building is three stories tall and 36 feet wide, and the street is 72 feet wide, is ideal for a human's clear understanding of the environment. It is worth noting that these dimensions mostly apply to someone looking at a building from across the street, rather than someone traveling down the street. Jacobs admits that this ratio does not necessarily work to spatially define the street, but is rather offering the dimensions for clear human perception of architecture and the built environment (Jacobs 1993). In ratios greater than 1:4, street trees can be used to create good spatial definition. On the other hand, smaller ratios found on Roman streets such as 1:0.5 of the Via del Corso (Fig 3.16), and 1:0.3 of the Via dei Greci, are still comfortable. Jacobs explains

this by adding, “It may be that the upper limits are more appropriately determined by the impact of height on comfort and livability of the street, as measured by sunlight, temperature, and wind, than by absolute and proportional height” (1993, 281).



Figure 3.16: Spatial definition on Via del Corso in Rome. Image from Google Earth.

Access

Access, in a non-physical sense, refers to the number of people able to use the street. Thus, access is directly related to use. This may be influenced by designated land use or physical barriers to use. Access is further understood in terms of what Mehta calls the public, parochial, and private street (2013). The public street is open to all; residents, visitors, the homeless, and workers alike feel welcome here and do not feel they are intruding on others' space. Parochial streets are open to those it is meant to serve. This may take the form of a commercial main street that fits its stores and amenities to serve its community and is thus more accessible to those people. This street may become public over time. Private streets have the least variation in use

and are most often designated to residential use. Access is limited to only residents of the street or neighborhood through physical signs or gates. Human-scale streets have many uses and thus many reasons for people to be there, making them accessible (Mehta 2013).

Access is also determined by physical form. In *Made for Walking*, Julie Campoli explains that small block size results in higher density of intersections, which present many route choices for the pedestrian. The pedestrian should be prioritized over the car in choice of routes. This could include mid-block pedestrian connections and pedestrian-only paths (Alexander et al. 1977, Campoli 2012, Dover and Massengale 2014). She includes Portland, San Diego, Cambridge, Albuquerque, and Denver as examples of cities with walkable blocks smaller than 2.5 acres, which equates to about 330 feet square.

Access may also be influenced by parcel size. Small parcel size promotes many different uses on the street while maintaining density. In residential areas, the row house makes the most of narrow, deep parcels. A raised stoop creates a semi-public but private space in a highly-populated dense area. Larger parcels create wider frontages and create less street diversity, and thus encourage fewer uses in the same amount of space (Campoli 2012). Campoli points to Savannah, Georgia as a prime example of human scale accessibility, with its small blocks and lots, intersection density, and open green spaces with a dense tree canopy.

In terms of access to destinations, Campoli says “a commercial corridor or intersection hosting a smaller range of local and neighborhood services” is vital to local accessibility within neighborhoods (2012, 17). The uses of a street can provide the “social glue for the community” (Alexander et al. 1977, 438). Street cafes can act as this “glue” because they are places where a diverse crowd of people may linger for hours at a time (Alexander et al. 1977). These places

offer space to relax while one can still participate in public life. Christopher Alexander recommends that these cafes be open to a busy path to maximize contact with street life.

Visual interest and aesthetic appeal

Visual interest in the built environment is directly linked to speed of information flow (Rapoport 1977). Environments built to be observed from a moving car may look different from those that were built for pedestrians. This is because of the rate at which humans can absorb information. Generally, pedestrians have a much better understanding and awareness of a place, its meaning and significance, than drivers or even users of public transit (Rapoport 1977). The pedestrian has a multisensory experience, increasing the dimensionality of available information, and because of this, is more likely to notice small variations or subtleties in architecture, such as variation in facades, windows, doors, roof pitch, materials, size, and height. Rapoport refers to these details as “noticeable differences” that would not be observed at higher speeds of transport (1977, 220). These differences are important because they give a place meaning, character, interest, and complexity. These small details are necessary to creating a stimulating and interesting experience for the pedestrian, and combine to create attractive places.

Jan Gehl has also studied the speed at which people take in information. Gehl refers to small, narrow urban spaces as “3 mph architecture,” which he contrasts with “36 mph architecture,” in the form of commercial strips with large, flashing signs (2010, 43). Building on Rapoport’s theories, Gehl explains that the speed of walking provides people with a rich sensory experience full of details, faces, and activities (Fig 3.17). “Short distance senses,” like smell and touch, can impact people on an emotional level, leaving them with vivid memories of a place (Gehl 2010, 47). Intimate contact, like conversation and personal interaction between people, takes place at short distances, in places of a smaller scale. Further, Gehl explains that if a person

needs to see something new every five seconds, shop facades should be about 16-20 feet in length, resulting in 15-20 shops per 100 meters, or 328 feet when traveling at about three miles per hour (Gehl 2010). Conversely, “car scale” has large spaces and wide roads. It is essentially magnified to accommodate the speed of the car, removing interesting details that could inform people of a place’s character or complexity. Car-scale landscapes could be anywhere; they have no character, and offer little to no visual interest to the pedestrian. Unfortunately, these landscapes became prevalent in the mid-20th century, as cities poured resources into retrofitting their streets for drivers instead of walkers. Smaller scale places, where personal contact and greater legibility is possible, make a more enjoyable experience for people and are often places people want to go.



Figure 3.17: Sankt Peders Stræde in Copenhagen, Denmark: an example of "3 mph architecture."

Image from Google Earth.

Rapoport and Gehl's work can be applied to the design of streets for people. Streets that possess comfortable and inviting environments full of complexity and texture are more likely to be populated than stark, monotonous roads (Fig. 3.18). The study of the human senses and the rate at which people absorb information in the landscape can be applied to make streets more interesting and attract visitors.



Figure 3.18: Falls Street in New Castle, Pennsylvania: a visually uninteresting street that fails to engage the pedestrian. Image from Google Earth.

Comfort

In Mehta's study of sociability on streets, he conducted interviews, surveys, and performed observation to determine factors that were important to people in supporting passive, fleeting, and enduring sociability, and retaining people on the street (2013). Mehta assumed most people on the street were there by choice. The number of people present and the duration of their

stay indicated how comfortable, pleasurable, and meaningful certain areas were and how well they served people's needs. A street that meets physiological and psychological human needs provides physiological comfort, supports established patterns of behavior, provides a pleasurable sensory experience, and holds meaning for users (Mehta 2013). He found that the livelier streets satisfied the most needs. When asked why people preferred certain blocks over others, the top three most common interview responses said the block offered a variety of use and stores, meeting places and people, and character and ambiance (Mehta 2013). These responses reflect a desire for diversity, destinations to meet others, and the "noticeable differences" that provide sense of place, richness, and texture (Rapoport 1977, 220). When asked why they chose not to use a certain block, most responders cited few stores serving daily needs, visual dullness, and little variety of use as their top three reasons (Mehta 2013). In another study, Lofland (1998) found that the combination of people and visual interest affected a user's inclination towards a street (as cited in Mehta 2013).

Mehta summarizes that interview responses generally followed the hierarchy of human needs derived from Maslow (1947, 1954), such as physical needs, safety, sense of community and belonging, environmental comfort, physical comfort, usefulness and convenience, sense of control over environment, sensory pleasure, and opportunity for socializing. In determining the amount of time people wanted to spend on the street, environmental comfort was important. Presence of sun and shade were important in cooler and warmer months, respectively. Generally, shade was desired, and people sought out shade the longer they spent on the street. Mehta explains, "The six most sociable block segments had a combination of sunlight and shade with a mean 63% street frontage under shade in summer compared to only 22% for the six least sociable block segments" (2013, 127). Trees, canopies, awnings, and overhangs provide shade

and shelter from the elements. Blocks that offered more shelter overall were found to be more sociable.

Physical comfort was important in retaining people on the street. Elements providing physical comfort directly impacted users' perceptions of the street's degree of pedestrian-friendliness. Users desired physical street qualities like sitting space; generous sidewalk width; street furniture; trees; other spaces like recessed facades, corners, and setbacks; and landscape elements like ledges and planters. Choice was valued in seating; William H. Whyte (1980) found that people liked personalizing their environments with objects they could adjust themselves, such as movable chairs (as cited in Mehta 2013). The presence of seating boosted sociability of a given block. Mehta breaks down seating into three categories: fixed, movable, and integral. Integral seating includes planters, ledges, bollards, steps, etc., or objects that are integrated into the built environment and aren't designed to be seating. It was discovered that people used all types of seating much more around stores where goods and services could be consumed immediately outside the store. People also tended to conduct social activity near street furniture or objects on the street such as building facades, shop windows, steps, parked cars, or other objects on the sidewalk like electrical panel boxes, parking meters, signs, light posts, bicycle racks, trees, and railings. People used street furniture and various objects to lean on, sit on, or stand near. Various vantage points and seat heights could explain the use of non-traditional seating on the street, and theories of prospect and refuge could certainly be applied here. This may also play into perceived safety on the street. Sidewalk width was considered a major factor in users' perceptions of pedestrian-friendliness. Blocks with wider sidewalks offered space for stationary and social activities, and were found to support sociability in tandem with other physical characteristics, such as seating (Mehta 2013).

Conclusion

This chapter is meant to serve as a survey of the literature on human-scale streets and sociability of streets. Through this survey, core values were obtained, which include **safety, spatial definition and sense of enclosure, access, visual interest and aesthetic appeal, and comfort**. Suggested ranges for measurable qualities corresponding to these values can be found in tables in Appendix A.

These values and qualities will inform the selection of case study examples in the following chapter of two commercial and two residential streets. The discussion of these values as they are demonstrated in the case study examples will serve as a framework for design recommendations for the selected streets of the Hill District in Chapter 5.

CHAPTER 4

CASE STUDY ANALYSIS OF HUMAN-SCALE, SOCIABLE STREETS

The human scale and sociability criteria developed in the previous chapter will be applied to real-world examples to find three case studies of human-scale, sociable streets in this chapter. Case studies were chosen to represent commercial and residential street typologies. These typologies were selected because of the specific street improvement recommendations in the 2011 Greater Hill District Master Plan discussed in Chapter 5. The master plan recommends various improvements to commercial and residential streets in the Hill District.

Each case study will be evaluated to determine which value(s) it exemplifies, and how the values are applied in its physical design. Any quantifiable values are observed and will be utilized in the design recommendations in the following chapter. The purpose of these evaluations is to identify the project's strengths, weaknesses, or oversights, and also to identify the design techniques used to implement sociability and human scale. The evaluations are limited to information and images found in literature and online, as no on-site evaluation took place. The specific case study examples were chosen because they were of the two street typologies described above, and demonstrate some or all of the values outlined in Chapter 3 and further explained in Appendix A.

Worth Avenue and Hibiscus Place

Location: Palm Beach, Florida

Project type: Commercial street

Project Date: 2010

Designers: Sanchez & Maddux, Landscape Architects; Bridges, Marsh & Associates, Architects

Project Overview

The Worth Avenue and Hibiscus Place intersection (Fig. 4.1) exemplifies a human-scale intersection in a commercial or “Main Street” setting (Dover and Massengale 2014). Here, merchants on the street banded together to pay for street improvements. Because of this, one of the basic goals of the design was to support the shop owners. The project consisted of redesigning the block of Hibiscus Avenue between Worth Avenue and Peruvian Avenue to be more shopper-friendly, along with streetscape improvements on Worth Avenue. The streetscape is remarkably simple and free of excess signs, striping on the roadway, telephone poles, powerlines, etc. New Urban shopping consultant Robert Gibbs noted, “Remember, the store owners want you to look at their windows—not the sidewalk or the streetscape” (quoted in Dover and Massengale 2014, 244). This simple aesthetic approach puts the spotlight on the store windows, and provides little other distractions. Dover adds, “The experience of the public realm is what’s important, not the streetscape or the new bumpout” (2014, 245). To achieve this, street lights were largely removed, relying on light from the shops to illuminate sidewalks. On this block of Hibiscus Avenue, which was renamed Hibiscus Place, parking lanes were removed to make room for a center planting island with water features and more sidewalk. Bollards were used to differentiate space (Fig. 4.2).



Figure 4.1: Intersection of Hibiscus Place and Worth Avenue, 2018. Image from Google Earth.



Figure 4.2: Northbound lane on Hibiscus Place. Image from Google Earth.

Safety

The design utilizes several traffic calming techniques. Removing Hibiscus Place's on-street parking may have made the pedestrian feel more vulnerable; however, the addition of the planted island shrunk the drive lanes and increased sense of enclosure, thus slowing traffic (Fig 4.2). The street is also missing large-scale, bright signs intended for higher speeds. Smaller, more subtle signs require slower speeds to read. These techniques have been shown to heighten drivers' awareness and cause them to slow down (Appleyard 1981, Dover and Massengale 2014, Mehta 2013). Low curbs levelled the street and sidewalks, fusing the pedestrian and car territory into one. Bollards provide a permeable barrier between the sidewalks and the drive lanes.

Access

Worth Avenue and Hibiscus Place should be studied in terms of physical access. Mid-block pedestrian crossings, or alleys, on Worth Avenue, such as Via Mizner (Fig. 4.3) and Via Parigi, allow people to cut through to the next parallel street without traveling the full length of the block (approximately 700 feet). The entrances to these alleys are complimented by wide curb bumpouts, creating a safe crossing experience for people (Fig. 4.4) (Dover and Massengale 2014). These alleys offer shaded access to more shops and businesses, and provide less expensive retail space to tenants since they are not on the main street.

It is worth noting that the presence of primarily high-end, luxury shops limits access to the street in terms of *use*. The primary uses on the street are not designed to be accessible to everyone, and the goods and services are intended to be used by a select group of people visiting the area.



Figure 4.3: Via Mizner, a pedestrian crossing accessed from Worth Avenue. Image from Palm Beach Illustrated.



Figure 4.4: Large bump-outs on Worth Avenue. Image from Google Earth.

Sense of enclosure and spatial definition

The narrow street combined with building height and large palms contribute to establishing a sense of enclosure. The buildings generally range from two to three stories in height, with some five story exceptions. The width of Worth Street is about 58 feet across including sidewalks and planting strips. This is creating about a 1:2 building height to street width ratio in most areas. This ratio provides spatial definition and creates a comfortable and inviting environment, as discussed in Chapter 3. Street trees in the form of coconut palms act as elements defining the space as well. A continuous street wall, combined with the spaced palm trees, and the width of the road, form an “outdoor room”, and establish sense of place and street character (Dover and Massengale 2014, 36). Given the height of the street trees, an even smaller ratio, closer to 1:1, is achievable as they also form a continuous wall defining the space.

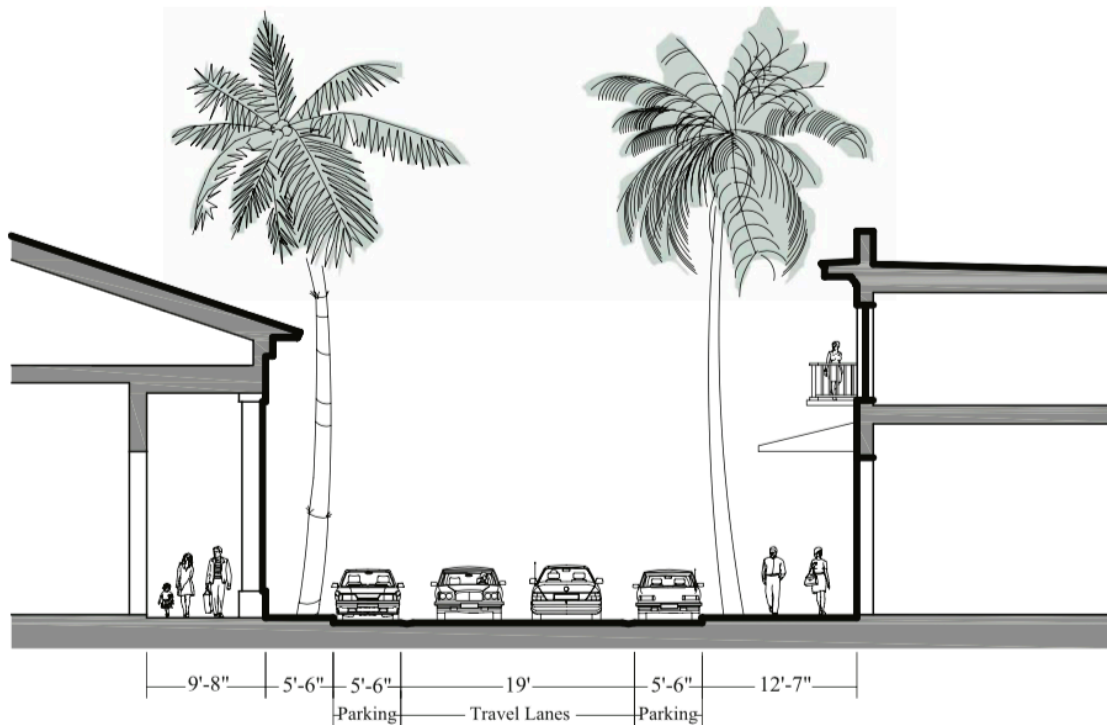


Figure 4.5: Cross section of Worth Avenue. Image from Dover, Kohl & Partners and the City of Palm Beach.

Visual interest and aesthetic appeal

Visual interest is created with unifying materials, and articulated facades. Context has been communicated through architectural style and plant material. In the subtropical climate of South Florida, the plant material looks appropriate and the buildings reference Mediterranean environments like this. Although the design is somewhat mimicking the aesthetic of Roman streets, this reference is fitting for the environment, and does not seem out of place. The unifying style works to create sense of place, richness, and texture (Fig. 4.6). The simplicity of the streetscape does not overwhelm the pedestrian and clearly communicates scale.



Figure 4.6: Street trees and a unifying architectural style create a sense of place on Worth Avenue. Image from Google Earth.

Comfort

Street trees and arcaded pedestrian passages provide shade in the heat and offer a more pleasant walking experience (Figs. 4.3-4). Seating is offered on benches and ledges (Fig. 4.2). Although some seating is provided, there could certainly be more on sidewalks. There is no seating outside cafes or businesses to encourage or support life on the street.

Oversights

The physical elements of Worth Avenue and Hibiscus Place create the conditions for an attractive street. However, the two streets are lacking some qualities that would make it more sociable, particularly Worth Avenue. Hibiscus Place provides a gathering space in the form of its island with plantings and fountains. While the designers made efforts to slow traffic and increase

perception of safety, they could have provided more areas for lingering and gathering, to enhance the social experience. This project can be appreciated in terms of scale, spatial definition, safety, aesthetics, and pedestrian amenities; with the addition of more public and private gathering places for people, the street could create more opportunities for sociability (Fig. 4.7).



Figure 4.7: Hibiscus Place in 2009 (before improvements) and 2017 (after improvements).

Images from Google Earth.

Bell Street Park

Location: Seattle, Washington

Project type: Commercial street

Project Date: 2014

Designers: SvR Design & MIG

Project Overview

Bell Street park emerged from a need for more open space in Seattle's Belltown neighborhood. Because of high land values, the purchase of open space for a park was not feasible. Bell Street was then examined for its potential as a new kind of park space. Before construction, Bell Street was a one-way, two-lane street with slanted parking on one side that acted as a thoroughfare and extended from South Lake Union to Elliot Bay. In the redesign, the street retained its mobility function while offering places for neighborhood residents to eat, sit, gather, and play. The street is an important bus thoroughfare, so maintaining public transit functionality was also necessary. The retrofits were installed on four blocks between 1st and 5th Avenues (NACTO 2014).

The shared street finds its origins in the Dutch *woonerf*, a street shared by people, cars, and bikes, with no curb distinctions and little signage (Appleyard 1981). On the *woonerf*, the priority is placed on the pedestrian, giving them the full access to the right of way. In the Dutch version, vehicular speeds are generally limited to 9-12 miles per hour and cars must be prepared to stop for human activity in the roadway. This concept asserts that people have a right to the street surrounding their residences, and their activity should not be impeded by car traffic. The *woonerf* was originally implemented in residential areas, but has now been tested in commercial areas as well (Appleyard 1981).



Figure 4.8: Bell Street during and after construction of the shared street redesign. Image from the National Association of Transportation Officials.

Safety

The designers leveled the sidewalks and single drive lane, reducing the spatial separation between pedestrian, bike, and car travel. The designers also shifted the single drive lane slightly in each block, effectively slowing traffic and reducing the threat of speed to pedestrians. These shifts in the travel lane created space for plantings and seating (Fig. 4.8). Borrowing from the woonerf model, there is little signage crowding the street. Large, bright signage can give the impression that the street is primarily meant for car traffic (Appleyard 1981). In place of signage, subtle cues inform people of the street's rules. Two-toned paving delineates the meandering single drive lane from the curb-less sidewalks. This sensitive treatment of the space gives power to the pedestrian and reclaims street space for activities other than driving. In the spaces created

by the meandering drive lane, planters flank the roadway, creating attractive barriers between cars and people (Fig. 4.12).

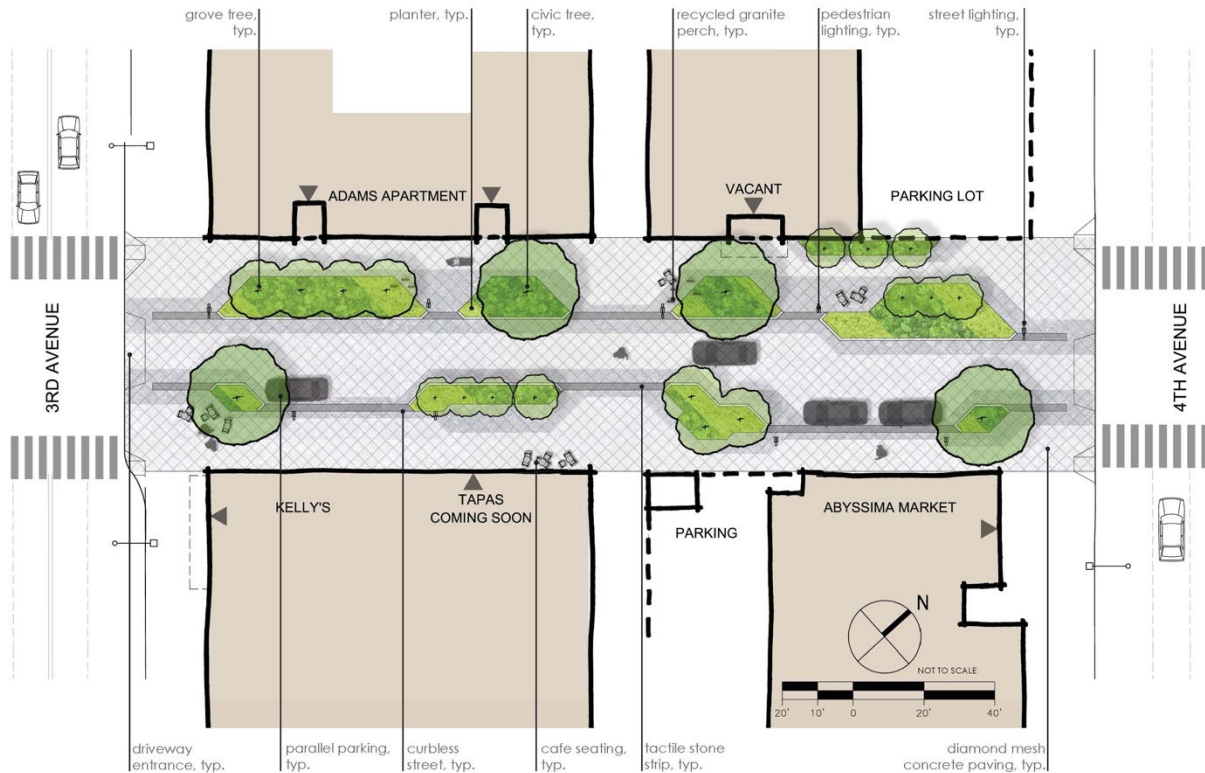


Figure 4.9: Plan of Bell Street Park. Image from NACTO and SvR Design.

Access

Even though the street has been altered to prioritize the pedestrian, the drive lane is still wide enough for buses and emergency vehicles. Bell Street sees about 300 buses pass through per day; maintaining this functionality was important to the success of the project. Different uses and amenities on the street (Fig. 4.9) attract many different users daily. The focus on the pedestrian enhances the access of many living in apartment buildings lining the street.

Spatial definition

An almost continuous street wall defines Bell Street, and the plantings along the street add to this definition (Fig. 4.10). Most of the single drive lane spans only 11 feet and expands to

20 feet in some areas to include a few parallel parking spaces. The total span of the street is about 64 feet from building to building. A mix of mostly two to three story buildings line these blocks of Bell Street, creating about a 1:2 building height to street width ratio.



Figure 4.10: Spatial definition created by buildings and vegetation on Bell Street. Image from Google Earth.

Comfort

The undulating paving pattern creates bays for seating, which is flanked by attractive planted areas (Fig. 4.11). As trees mature, they will offer shade to café patrons and passersby alike.



Figure 4.11: Plantings, bike racks, and seating areas on Bell Street. Image from NACTO.

Oversights

Despite the street's accommodations for pedestrians and cyclists, it is not a true woonerf, as there is still a clear delineation between sidewalk and roadway. Although the two-toned pavement is used to inform drivers where they can go, this method prevents the street from truly being shared by all.

Roslyn Place

Location: Pittsburgh, Pennsylvania

Project type: Residential street

Project Date: 1914

Designer: Thomas Rodd

Project Overview

Roslyn Place is noted as a prime example of a sociable, human scale residential street. The street may be easily missed if driving down Ellsworth Avenue in Pittsburgh's Shadyside neighborhood. However, occasionally pedestrians walking past pause to admire its charm and notice its uniqueness. The street is only 250 feet long, and its size contributes to its sense of enclosure, spatial definition, safety, and comfort. The street contains 14 single-family homes, with four townhomes at its end. Jacobs describes the streets as an outdoor room, 65 feet across by 250 feet long, with walls of attractive brick homes, a ceiling of tall, old sycamores, and the shared paths that lead to rear yards act as windows, or points of permeability (Jacobs 1993).



Figure 4.12: Roslyn Place shaded by large sycamores. Image from Preservation Pittsburgh.

Safety

There are no driveways on Roslyn Place, so cars must park on the street. This creates a single narrow drive lane, which slows traffic (Fig. 4.12). The small scale of the street and short distances between houses enable a kind of neighborly surveillance of the street, as well as social interaction between neighbors. Jacobs explains, “When it is easy to see people, when you almost can’t avoid it, then it can be easy to know them” (1993, 16). A 45-foot distance from stoop to the sidewalk on the other side of the street, creates an intimacy and feeling that children could be left unwatched on this street. The distance from the center of the street to the end is about 120 feet. Jacobs notes these distances allow recognition of faces, forms, and movements; through these features he explains, “Recognition, discussion, communication, community are encouraged by the nature of the street” (1993, 17).

Access

On Roslyn Place, sidewalks are not interrupted by driveways, as there is only on-street parking. The pedestrian can travel continuously, without interruptions from cars backing out of driveways (Fig. 4.13). The short distances between adjacent houses permit a higher density for single-family homes, creating a density of 14 dwelling units per acre. This density can help support public transit, local businesses, and local schools. The neighborhood commercial street, Walnut Street, is only two blocks away, enabling residents to walk a few minutes to shops, the pharmacy, the bank, and other services.



Figure 4.13: Continuous sidewalks on Roslyn Place. Image from Google Earth.

Sense of enclosure and spatial definition

The narrowness of the street and the uniformity of the houses creates a building height to street and sidewalk ratio of about 1:3. The two-story houses lining the street and defining its west end act as a continuous street wall, enclosing the pedestrian (Fig. 4.13). As a result, the space is defined and is scaled to the human form (Jacobs 1993, Hedman and Jaszewski 1984, Dover and Massengale 2014). The tall sycamores also act as elements defining the space, dividing up the length of the street.

Visual interest and aesthetic appeal

Although at first glance, the houses may look very similar, but there are in fact five architectural styles on the street. The facades are rich and textured (Fig. 4.14), providing enough

variation and “noticeable differences” to interest the pedestrian at walking speed (Rapoport 1977, 220).



Figure 4.14: Facades on Roslyn Place. Image from Google Earth.

Comfort

The street trees provide shade in the summer months, and allow sunlight to warm the street in the winter months. The choice of sycamore allows a dense canopy to be established over time, enhancing the sense of enclosure and shading almost the entire street (Fig. 4.15).



Figure 4.15: Street trees control climate and define the space. Photograph by Payton Chung.

Oversights

Although Roslyn Place may seem ideal, it probably could not be built in its original form today. It is inaccessible to fire trucks and is not designed to accommodate snow plows, or other municipal vehicles. The houses are only three to four feet apart, limiting sense of privacy. The design of the street reflects the cultural norms of the time period in which it was built, and might meet today's practical criteria for residential development. Despite these potential issues, the overall scale of the street was certainly designed with humans and pedestrians in mind. The street is comfortable and pleasant because of its dimensions and other elements that prioritize the residents.

Bartram Street & Brasfield Square, Glenwood Park

Location: Atlanta, Georgia

Project type: Residential

Project Date: 2001

Designer: Dover, Kohl & Partners and Tunnell-Spangler-Walsh & Associates

Project Overview

Glenwood Park was a brownfield development on the former site of a concrete plant. The design intention was to create a livable, mixed-use traditional neighborhood that had activity on the street. The neighborhood's founder Charles Brewer used "Busytown" from children's cartoon *The Busy World of Richard Scarry* to illustrate his idea of an active place where people of varying backgrounds meet and know each other (Dover and Massengale 2014). Glenwood Park was an anomaly at its conception; its dense, fine-grained urban fabric with small businesses, open spaces, and residences were not the norm in residential development. It was designed to support human-scale walkability and the activities of the public realm (Fig. 4.16).



Figure 4.16: Conceptual rendering of Brasfield Square, Glenwood Park. Image courtesy of Dover, Kohl & Partners and Tunnell-Spangler-Walsh.

Safety

In Glenwood Park, cars are accommodated but not prioritized. Drive lanes on Bartram Street, the neighborhood's main street, are 10 feet wide and thus the turning radii are smaller, causing traffic to slow (Fig. 4.17). The street is flanked by 7-foot parking lanes and sidewalks are 10 feet. Bartram Street terminates at Brasfield Square, which motorists must drive around. The placement of the square slows traffic and require drivers to stay alert. Most streets have parallel parking, which may make pedestrians feel safer by forming a barrier between them and traffic. Planting strips and street trees add to this barrier while beautifying the street.

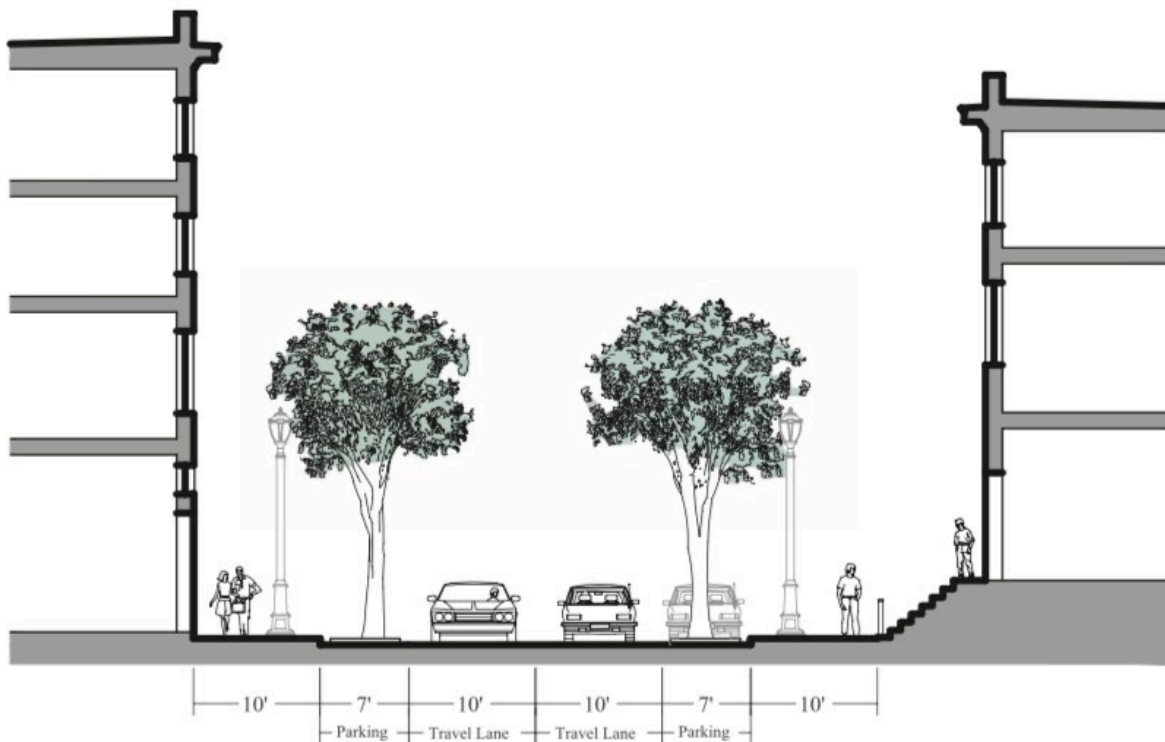


Figure 4.17: Section of Bartram Street, Glenwood Park. Image courtesy of Dover, Kohl & Partners and Tunnell-Spangler-Walsh.

Access

One of the primary concepts in designing Glenwood Park was creating a mixed-use live-work neighborhood. These units are concentrated around Brasfield Square, which maximizes

“the mixing” of people (Dover and Massengale 2014, 336). As discussed in the previous chapter, an accessible street deals directly with its uses. The small lot sizes and three to four-story buildings allow a diversity of use, which also contribute to visual interest and aesthetics. Blocks are between 200-250 feet long, mirroring the size of Portland’s walkable blocks. This is welcome in the time of large shopping complexes and monolithic architecture.



Figure 4.18: Buildings surrounding Brasfield Square, Glenwood Park. Image courtesy of Dover, Kohl & Partners and Justin Falango.

The square provides a social hub and meeting place for residents living and working in the businesses and units above them. The architectural features of the surrounding buildings also contribute to the degree of social interaction. Balconies extend from the buildings, offering points of social access to the street life below (Fig. 4.18). The presence of balconies and terraces

can also contribute to the feeling of safety, positioning more “eyes on the street.” The neighborhood’s residential streets are lined with sidewalks and planted strips with street trees. Pedestrian pathways run between single-family homes on Hamilton Street.

Spatial definition and sense of enclosure

Around the square, three to four-story buildings offer a sense of enclosure without feeling ominous or overpowering. The building height to street width ratio on either side of Brasfield Square is about 1:1 when considering the street trees lining the square’s outer edges. The square’s dimensions are within the ranges of facial recognition (about 70 feet), as it is about 53 feet wide and the 140 feet long (Alexander et al. 1977, Gehl 2010). Looking across the square from the western or eastern side, one can recognize faces and hear voices across its 53 feet. Alexander explains that a square or plaza’s ideal width falls between 45-60 feet, a distance that enables recognition of faces and the ability to hear someone’s voice. This makes the space more personable and comfortable. Oversized open spaces feel empty, isolated, and unsafe (Alexander et al. 1977).

Bartram Street travels north, lined with a continuous street wall and marked with street trees and parked cars. The 1:1 ratio continues, with the street framed by three and four-story townhomes (Fig. 4.19). Some homes’ entrances are flush with the sidewalk, whereas some are raised a half-story and have stoops. The houses are all different but share a unifying architectural character. The street continues north until it opens to the neighborhood’s sunken park, which contains a water feature that acts as stormwater infrastructure, a playground, and open space for recreation. The journey on Bartram Street from Brasfield Square to the park contains varied spatial experiences and is therefore interesting and comfortable for residents.



Figure 4.19: Bartram Street looking north towards the neighborhood park, Glenwood Park.

Image from Google Earth.

Oversights

Despite Glenwood Park's accommodation of pedestrians with its walkable fabric, cars still have a great presence in the neighborhood. Behind the townhomes on Bartram Street, there is a 36,000-foot asphalt parking lot. While parallel parking on the narrow streets may be helpful in slowing traffic, as well as convenient for residents, a large parking lot takes up space that could have been used to further densify the neighborhood. Although the parking lot has trees and planted medians between rows, it adds to the total area of non-permeable surface, producing more stormwater runoff. From aerial imagery, the parking lot is barely half-full, and may be excessive for the neighborhood's needs. Subsequently, this area of the neighborhood deviates from its otherwise human-scale nature.

Conclusion

These design methods utilized in the case study examples discussed here will inform the redesign of two streets in the Hill District. The streets chosen will correspond with the typologies above, offering design recommendations for a commercial and a residential street. The case study examples were compared to the human-scale street sociability criteria established in Chapter 3. A matrix of the case study examples and how they align to the qualities outlined in the previous chapter can be found in Appendix B. The techniques used in the case study examples will be considered in the context of the Hill District and its needs, discussed in the following chapter.

For a neighborhood commercial street, the Worth Avenue and Hibiscus Place example can be considered for its use of traffic calming design, spatial definition through use of buildings and trees, walkability, and simple visual aesthetic. In this example, the visual emphasis was placed on the shops and businesses while still enhancing the pedestrian experience, a technique that should be translated to all neighborhood commercial areas built for walking. Although the context of the Hill District's central commercial area is much different than that of Palm Beach, the pedestrian-prioritizing principles are still relevant. This example illustrates the dimensions of a comfortable, aesthetically pleasing, human scale experience for shoppers, which is necessary for increasing economic activity.

Bell Street Park demonstrates how the woonerf concept can be applied in a dense, urban commercial street environment, even accommodating public transit. The dimensions of the drive lane, and surrounding sidewalks, can inform the implementation of a shared or pedestrian-focused street concept in a commercial setting. The planted areas act as traffic protection devices, as well as aesthetic and environmental assets. This street can be studied to determine

approximate dimensions for a human scale shared street that can also still be functional for the city's daily needs.

Roslyn Place acts a model for human scale residential street design. Roslyn Place models the appropriate street widths and building heights to convey sense of enclosure and spatial definition, and this ratio can be applied to other residential streets. The width of the street and on-street parking also contributes to slower speeds. This example demonstrates a comfortable and safe environment for residents, while still maintaining density (14 du/a). The houses are interesting and vary slightly, while still appearing cohesive. The materials are rich and textured, enhancing the experience.

Bartram Street and Brasfield Square illustrate how social public spaces can be woven into a fine-grain residential urban fabric. The design utilizes the human scale ratios described in Chapter 3 to define the space and provide sense of enclosure. It also uses narrow street widths to calm traffic, increasing the feeling of safety in the neighborhood. The richly textured architecture creates an interesting environment and thus a pleasant place to be. These features can inform future residential development discussed in the following chapter.

CHAPTER 5

DESIGN RECOMMENDATIONS FOR THE HILL DISTRICT

Precedent Designs

The Hill District (Fig. 5.1) and its revitalization has been the subject of multiple masterplans and proposals in the past. The most comprehensive plan has been the 2011 Greater Hill District Master Plan, prepared by Sasaki Associates and Stull & Lee, Inc. for various community stakeholders. The masterplan is formulated around community goals, which were derived from over 25 existing plans and agreed upon by stakeholders and residents at community meetings. The goals were then interpreted into Program Initiatives and Urban Design Proposals. The Program Initiatives were translated into specific projects that corresponded with community goals. The Urban Design Proposals addressed opportunities to improve the physical environment, in alignment with the community goals. The Proposals addressed specific sites throughout the Hill District and could be implemented independently of each other.

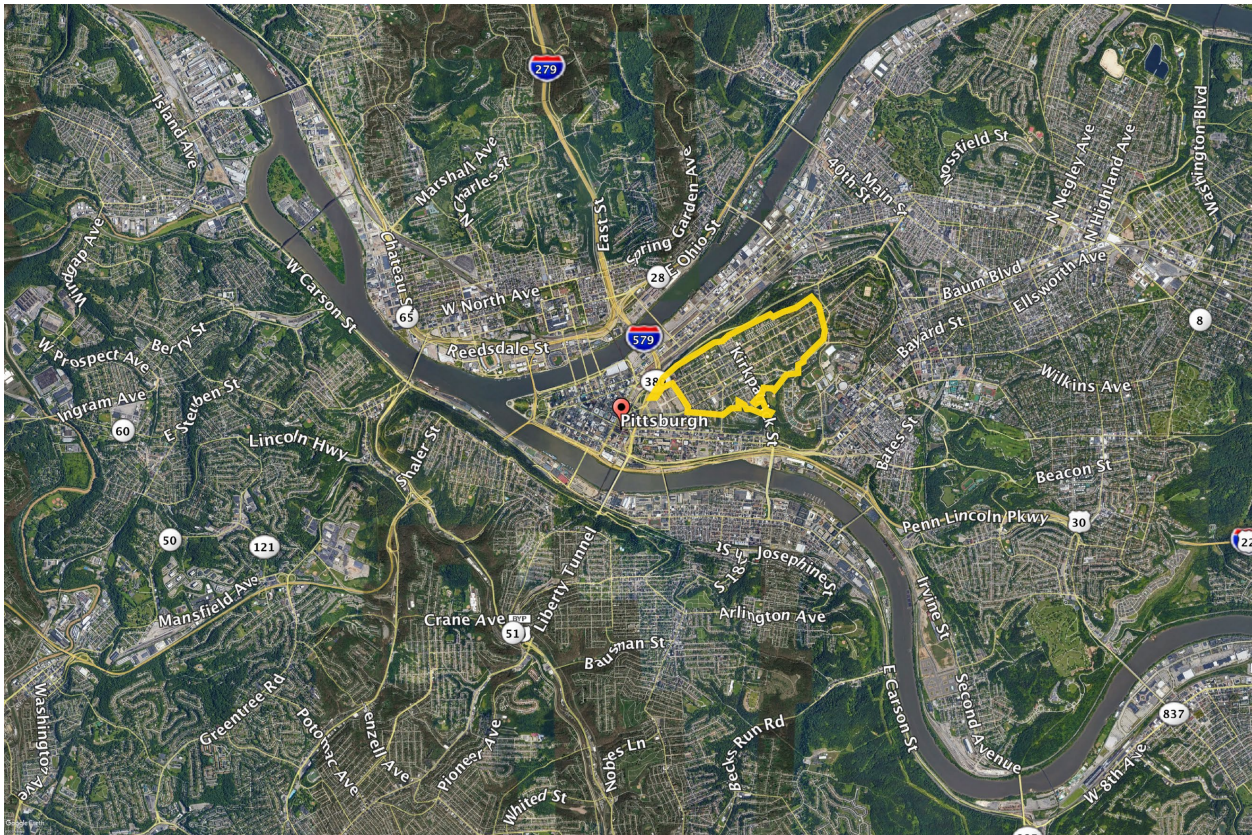


Figure 5.1: The Hill District highlighted in the City of Pittsburgh. Aerial image from Google Earth. Graphic by author.

This thesis will utilize some of the Master Plan's Urban Design Proposals, specifically those concerning Centre Avenue and Bedford Avenue, and determine which opportunities stakeholders have identified as priorities for street redesigns. The master plan identifies "priority streets" in the Master Plan Framework graphic (Fig. 5.2), including Crawford Street, Centre Avenue, Bedford Avenue, Kirkpatrick Street, and Herron Avenue (Merrill et al. 2011, 9). The Master Plan states that the community and the Management Committee individually ranked certain areas of the Hill District according to level of priority. Centre Avenue ranked highly on both lists. Herron Avenue was a higher priority for residents than for the committee. Crawford Street was next, followed by Bedford Avenue. As far as economic feasibility, Centre Avenue

ranked first, followed by Bedford Avenue and Crawford Street. These areas were identified as the highest priority, and the most economically feasible areas for renovation.



Figure 5.2: Master Plan Framework from the Greater Hill District Master Plan, 2011. Image from Sasaki Associates.

While the Master Plan identifies these areas as candidates for improvement of streetscape design and “pedestrian connections,” it does not describe what these improvements could be, beyond “lighting, signage, and vegetation,” and seldom mentions the social aspect of streets (Merrill et al. 2011, 78). No mention of human scale streets is made in the document. The Master Plan lacks a design principle-focused approach for its targeted streets. This thesis serves as a supplement to the Greater Hill District Master Plan, which has not adequately addressed the

importance and value of the social capital created by human scale design in the redesign of several priority streets.

Selection of Application Sites

Using the information obtained from community meetings and committee meetings in the Master Plan, two streets will be selected from the “priority streets” for redesign (Merrill et al. 2011, 5). The redesigns will be guided by the human scale sociability criteria established in Chapter 3, and design methods will be informed by the case study examples in Chapter 4. The streets chosen as application sites were determined by the level of priority assigned by stakeholders in the master planning process, and the street typologies documented in the case study examples in Chapter 4. Given these factors, Centre Avenue and Bedford Avenue were selected as the application sites.

Centre Avenue (Fig. 5.3) is the Hill District’s historic main street and its renewal is listed as one of the community goals (Merrill et al. 2011, 5). Centre Avenue has historically been the main commercial district in the Hill District. The Master Plan intended to redesign it with this in mind, focusing on economic rehabilitation of the street. Given this economic improvement focus through suggested programs and policies, the physical component of suggested improvements in the Master Plan include only signage, lighting, and vegetation. These improvements are intended “to reinforce the pedestrian character and quality” of Centre Avenue, with particular attention to the blocks between Devilliers Street and Kirkpatrick Street (Fig. 5.3) (Merrill et al. 2011, 97).

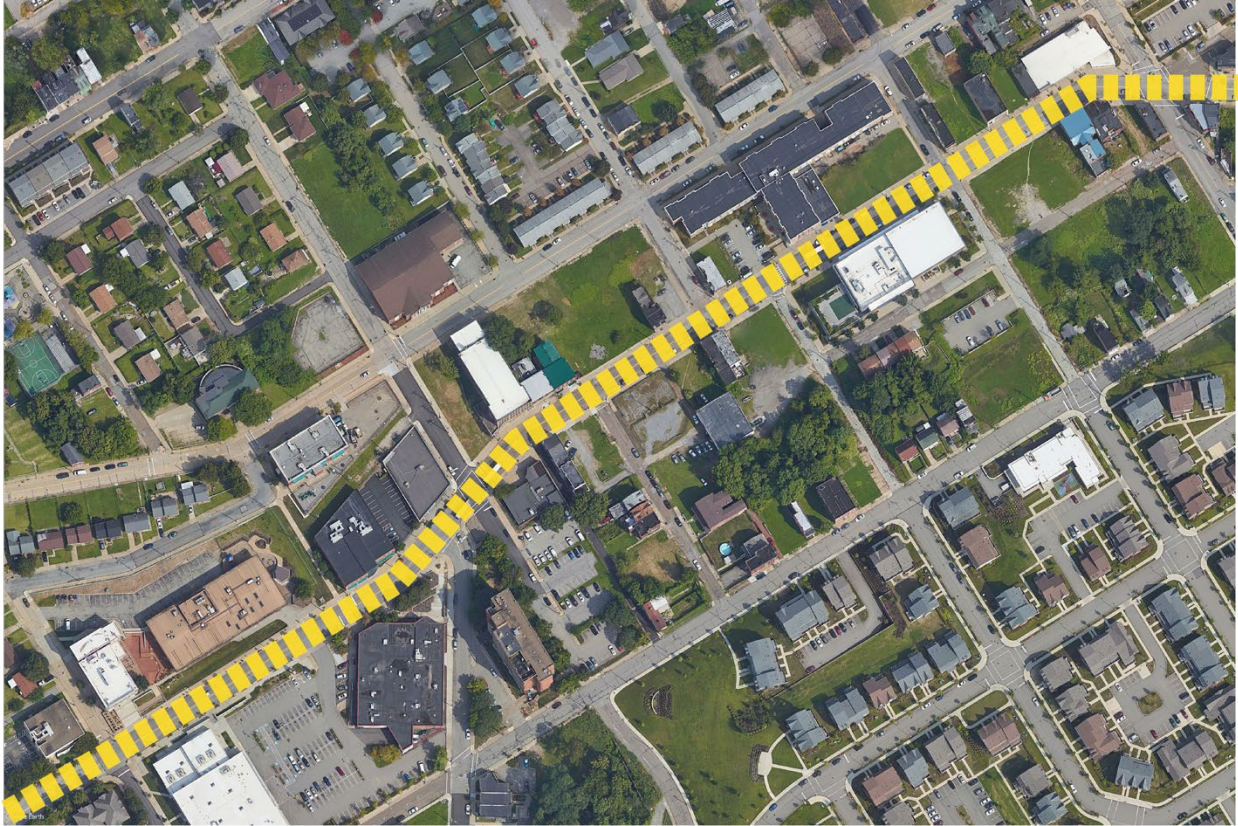


Figure 5.3: Aerial image of Centre Avenue site with Centre Avenue highlighted. Image from Google Earth.

On Bedford Avenue (Fig. 5.4), the plan recommends more residential development, including preservation of existing historic housing and infill. Streetscape improvements are also recommended, from downtown to Herron Avenue, with street trees, lighting, signage, sidewalks, and small scale pedestrian spaces such as seating and play spaces to make the street more walkable and develop a continuous street edge (Merrill et al. 2011). The plan also recommends redeveloping the Bedford Dwellings public housing to match the character of existing homes. The plan does not identify any particular focus area on Bedford Avenue. The author chose to focus on the blocks between Devilliers Street and Kirkpatrick Street, because this area connects important community assets further discussed in the following pages.

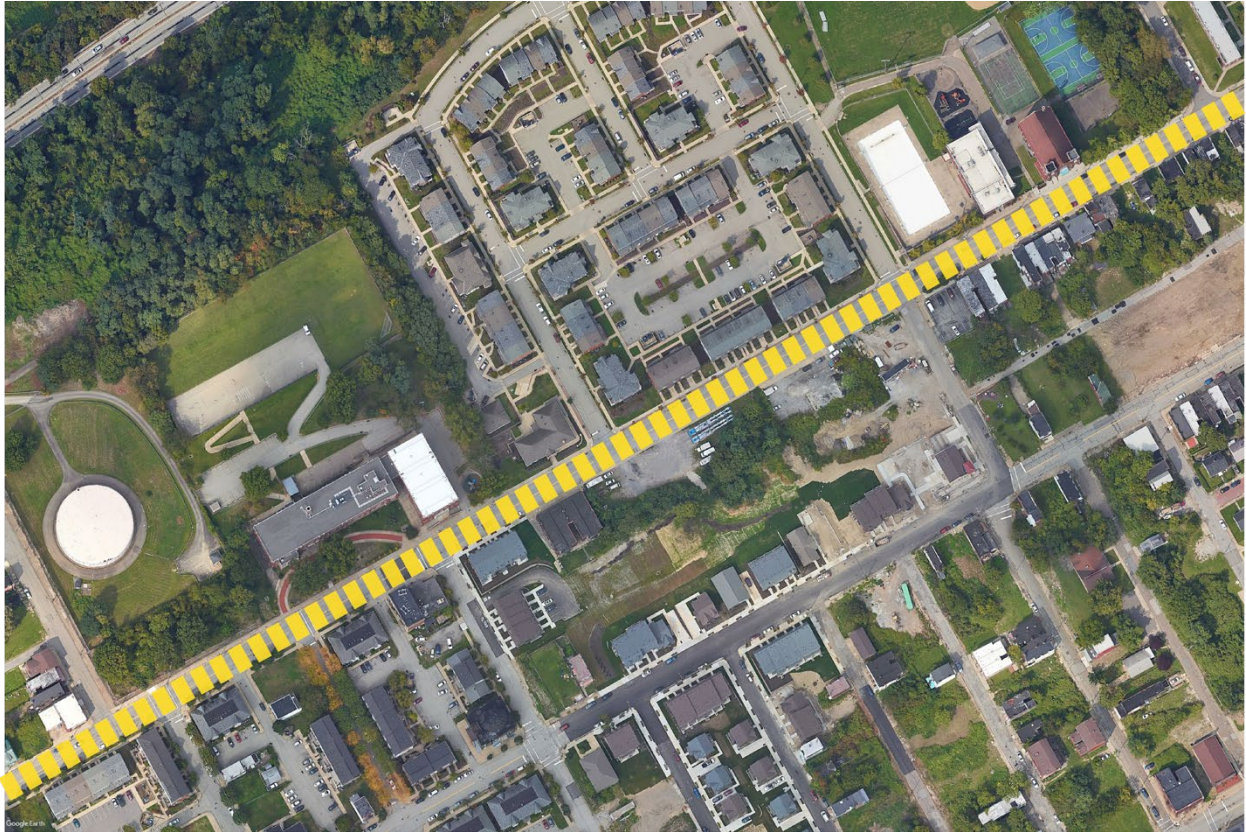


Figure 5.4: Aerial image of Bedford Avenue site with Bedford Avenue highlighted. Image from Google Earth.

In the sections of the Master Plan discussing both streets, character examples are used to illustrate what these improvements could look like. On page 97 of the plan, two character images of “improved, pedestrian-oriented commercial streets” show additions of planted areas, wide sidewalks, and attractive storefronts. However, without a concerted and comprehensive human scale, sociable approach to street design, the addition of these elements may not work cohesively and effectively to promote sociability.

Centre Avenue Commercial District Design Recommendations

The design intent of the Centre Avenue redevelopment was to implement a human-scale main street concept, particularly in the blocks between Devilliers and Elmore Streets. These blocks connect community assets, such as the Thelma Lovette YMCA, Hill House Association

and the Kauffman Center, whose roots go back to the community's original settlement houses, with historic landmarks like the New Granada Theater. The design seeks to reestablish lost connections and redevelop a human scale shopping and commercial street to serve residents of the Hill. Figures 5.5 and 5.6 show the existing and proposed street grid and building footprints for the Centre Avenue site. Figure 5.7 shows the overall master plan of redesign with key community assets highlighted.

Safety

Safety is addressed with pedestrian islands in the blocks between Devilliers and Erin Streets (Fig. 5.8). The islands are 15 feet wide and stretch between wide pedestrian crossings on Centre. The islands have five feet of sidewalk on either side of a raised planter with trees, which can also act as seating. A 12" raised curb separates the island from the road, protecting pedestrians from car traffic. Bollards could also be implemented here to add further protection. Drive lanes are made narrower at 12 feet; the addition of planted islands creates enclosure that makes drivers slow down and be more cautious, increasing overall pedestrian safety (Appleyard 1981). Crosswalks will also be raised 12" from the road and slope down for cars to pass over. This creates a pedestrian network of infrastructure that is raised above car traffic, including sidewalks, islands, and crosswalks.



Figure 5.5: Centre Avenue site existing conditions. Graphic by author.



Figure 5.6: Centre Avenue site proposed conditions. Graphic by author.



Figure 5.7: Plan graphic of Centre Avenue Design Recommendations. Graphic by author.

Spatial Definition and Sense of Enclosure

Most buildings in this area are represented at three to four stories tall. This not only provides more opportunity for creating an ideal building height to street width ratio, but also maintains a connection from buildings to life on the street (Alexander et al. 1977). In Figures 5.8 and 5.9, a 1:1 to 1:2 building height to street width ratio is maintained using human scale architecture and street trees to frame the space and create sense of enclosure. Figure 5.8 shows a cross section of the streetscape between Devilliers and Erin Streets on Centre Avenue. Enclosure is achieved here using street trees and three-story buildings, which were represented as 35-foot-tall buildings. The Grove Street shopping alley (Fig. 5.9) has a 1:1 building height to street width ratio, due to its two and three-story buildings, approximated at 25-35 feet tall, and a street width of 30 feet.

A community marketplace sits between Grove Street and Calliope Way on Centre Avenue (Fig. 5.10). The marketplace consists of 15'x'15 tent-like structures surrounding its three sides with a 45-foot open space in the center. The dimensions of this space correspond with the distance that allows facial recognition (60-70 feet maximum), and is suited to hold about 50 people without looking empty, given an allowance of 150 square feet per person (Alexander et al. 1977, Gehl 2010). The space is broken up with a 10-foot wide planter that runs along the center of the plaza. The trees in the planter offer a sense of enclosure between the tents and the planter, creating smaller, more intimate spaces. The planter's walls will also provide seating (Fig. 5.10).

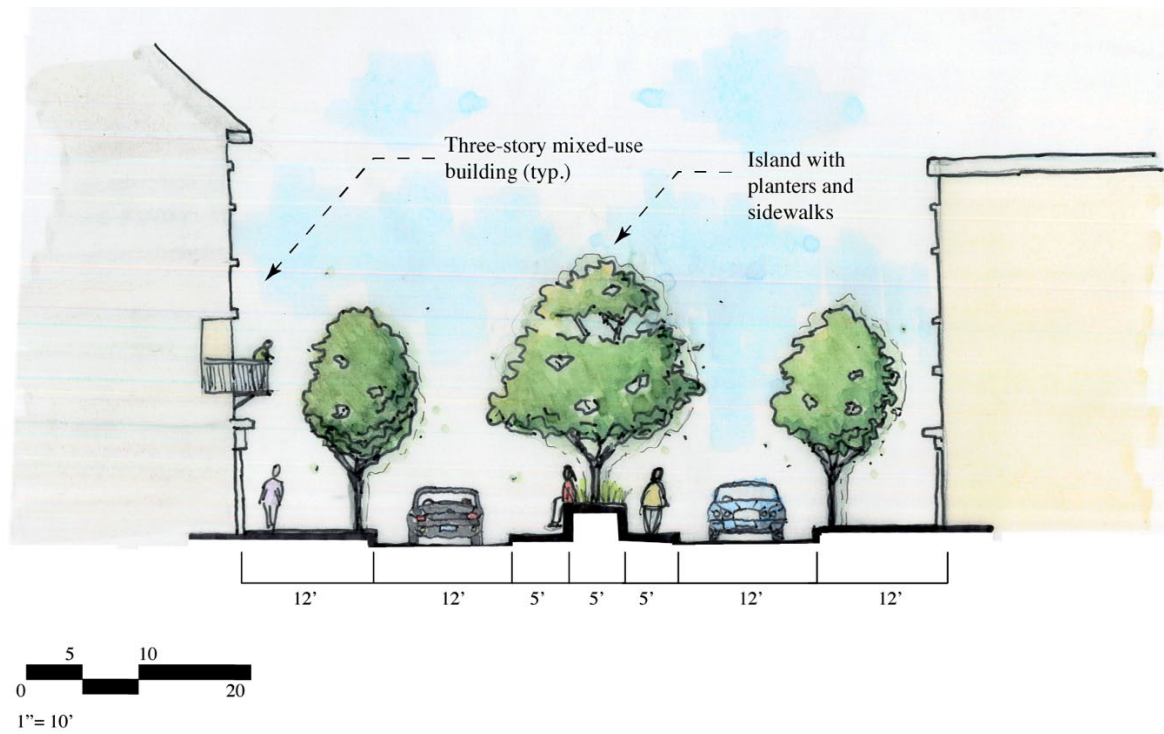


Figure 5.8: Section view of Centre Avenue streetscape between Devilliers Street and Erin Street.

Graphic by author.

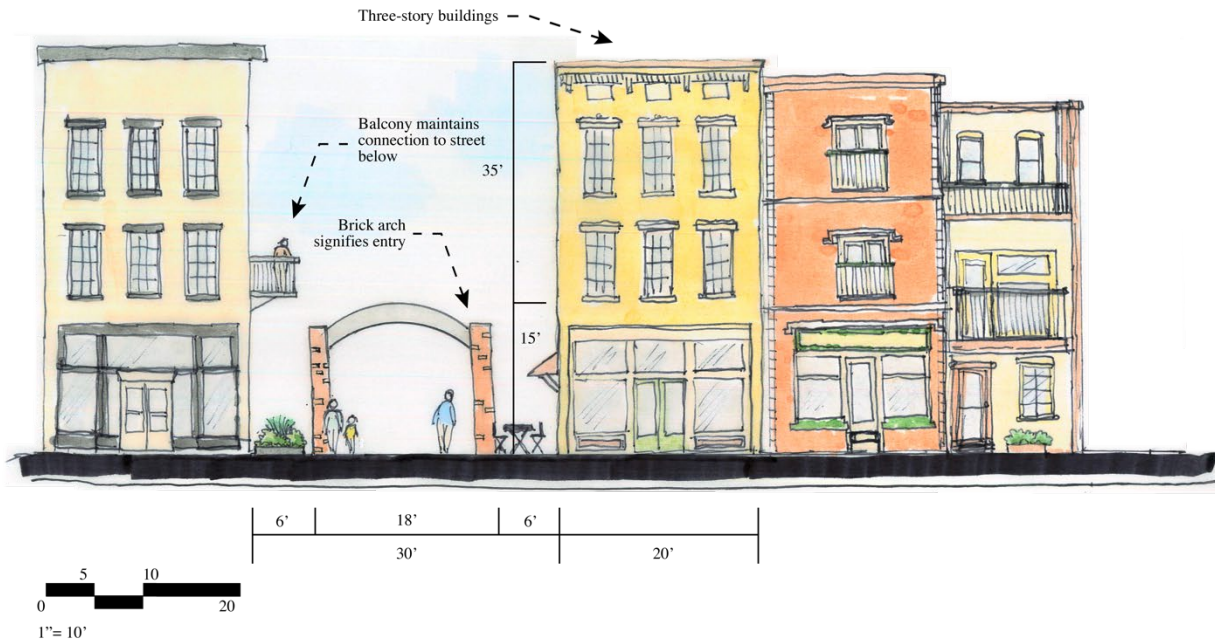


Figure 5.9: Section view of Centre Avenue and Grove Street Shopping Alley looking north on Grove Street. Graphic by author.

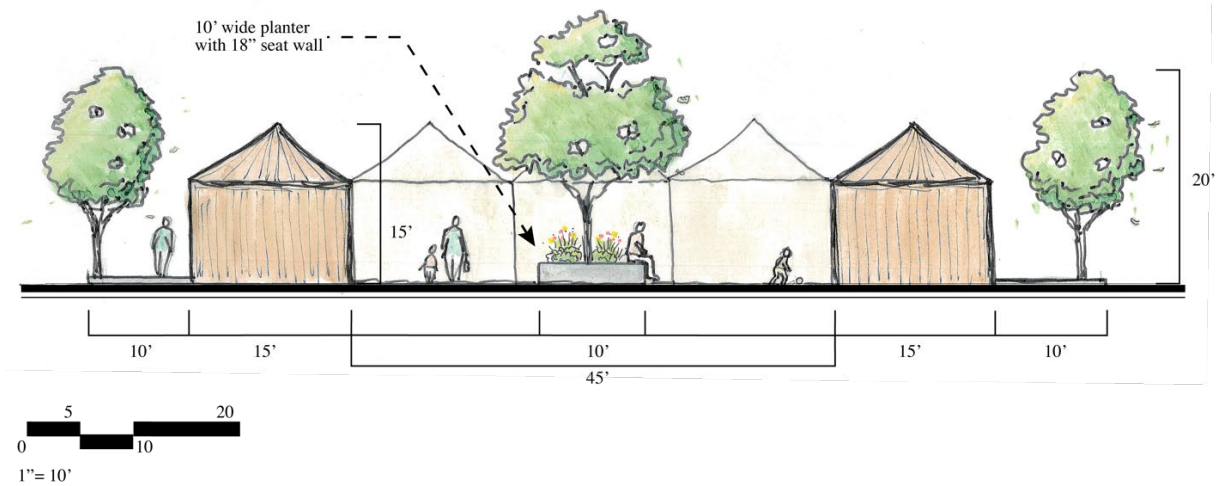


Figure 5.10: Section view of Hill District Marketplace looking south on Centre Avenue between Grove Street and Calliope Way. Graphic by author.

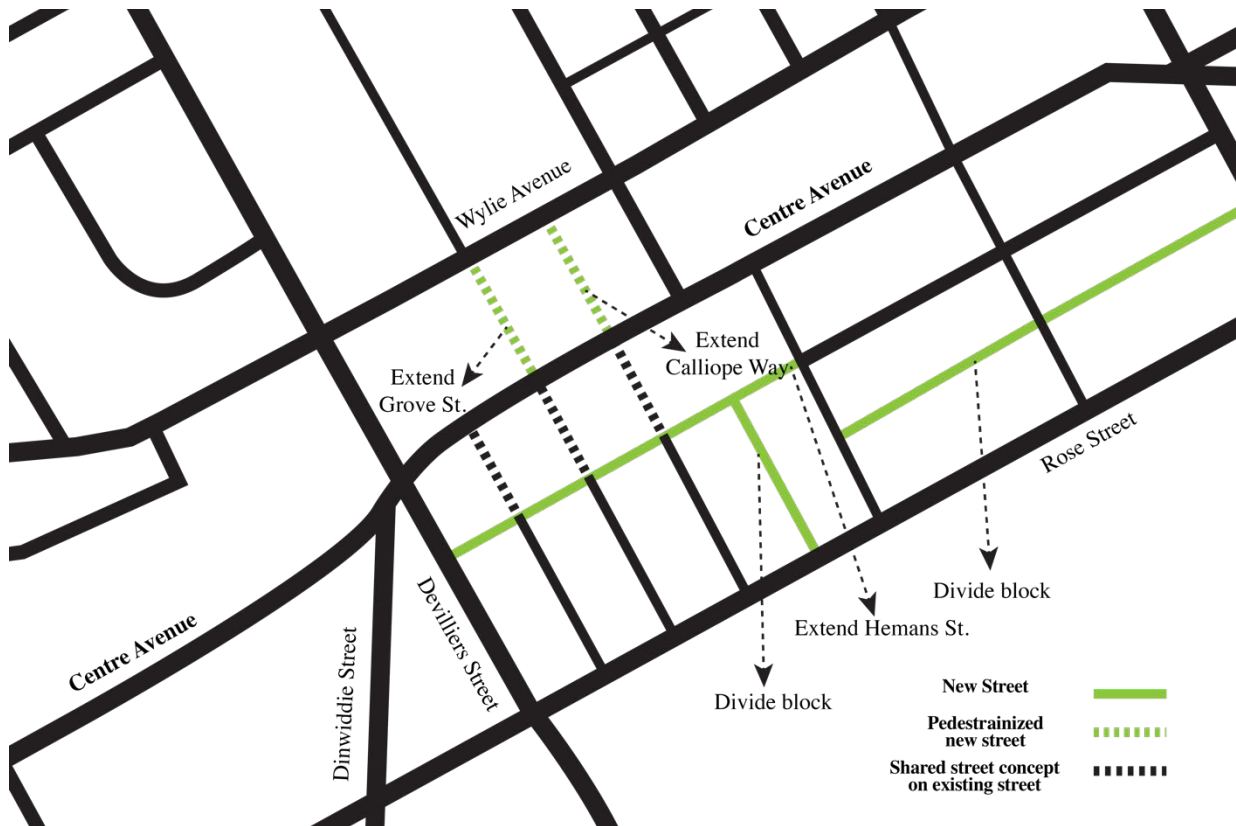


Figure 5.11: Figure ground diagram of existing and proposed streets. Image provided by author.

Access

Physical pedestrian access has been improved with the addition of new street connections and the pedestrianization of new streets (Fig. 5.11). Grove Street and Calliope Way become pedestrian and bike access only north of Centre Avenue. One block south of Centre, they become shared streets, where pedestrians, cyclists, and cars share road space on one plane, without curbs. These designations, along with traffic calming islands on Centre, slow car traffic in the area, making it more pedestrian-friendly and inviting. Thus, it is easier to walk somewhere, than to drive. Street parking is provided towards the western end of Centre and on most side streets (Fig. 5.7).

Balconies and roof gardens allow occupants to access the street life below them. Buildings with permeable elements like balconies, terraces, along with many windows and points

of entry/exit promote a social exchange between life in and outside of buildings on the street (Fig. 5.9).

As far as access in terms of use, mixed-use, live-work buildings are proposed along Centre Avenue. The blocks south of Centre should contain dense, but mid-rise multi-family and single-family housing in the form of row houses and apartment buildings (Fig. 5.7).

Neighborhood services should be provided on Centre Avenue and the blocks surrounding such as a grocery store, drug store, and general retail shops, including the neighborhood marketplace (Fig.10). These should be independently owned and small-scale to support the local community.

Visual Interest and Aesthetic Appeal

Centre Avenue and its surrounding blocks should have human-scale architecture with varying building materials, rich façade details, and many windows and doors creating interaction with life on the street. Figure 5.9 shows an example of visual interest created by human-scale architecture with detailed building facades. The building facades are about 20 feet wide, aligning with Jan Gehl's recommendation of facades 16-20 feet wide to see something new every five seconds at walking speed (2010). The use of street trees and plantings in the streetscape design adds to the overall aesthetic appeal of the street.

Comfort

Comfort of the street was mainly addressed in the provision of seating, shade, and smaller, more intimate spaces on the street. Street trees create shade and raised planters with seat walls on Centre and in the marketplace, provide casual seating for passersby (Figs. 5.8 & 5.10). Café seating provided in the shopping alleys on Grove Street and Calliope Way provide more private and adjustable seating (Figs. 5.8-5.10).

Bedford Avenue Residential Design Recommendations

The design intent on Bedford Avenue was in response to the Sasaki master plan indication of residential development and streetscape improvements. Thus, the goal was to develop a human-scale residential neighborhood with mixed-use development on the main corridor, Bedford Avenue. The application site is focused on the blocks of Bedford Avenue between Devilliers Street and Kirkpatrick Street creating a connection between residential development here and the commercial district on Centre Avenue, which is three blocks to the south (Fig. 5.14). The development area is centered around the Miller African-Centered Academy on the north side of Bedford, a Pre-K-5 school that focuses on the educating the Hill's local community. East of the school is the Ammon Community and Recreation Center, a historic recreation center for Hill residents that is still in operation today. These community assets bookend the proposed residential development. Figures 5.12 and 5.13 show the existing conditions and proposed improvements to the street grid and building footprints on the Bedford Avenue site.

The design recommendations include narrowing lanes on Bedford Avenue, creating alleys which proposed residential units can access, and pedestrianizing some side streets connecting to Bedford, limiting vehicular access to the street.



Figure 5.12: Existing conditions on Bedford Avenue site. Graphic by author.



Figure 5.13: Proposed conditions on Bedford Avenue site. Graphic by author.

Safety

Safety is addressed in the design using narrow drive lanes and wide sidewalks (Fig. 5.15). Sidewalks are dotted with raised seat-wall planters offering further protection from traffic. Trees frame the roadway and a 12” raised curb enables pedestrians to see over cars, promoting a stronger sense of safety. Narrower lanes slow traffic, making drivers more cautious. Speed limits should be around 15 miles per hour in this zone, where children may be crossing to go to school.

A shared street concept is proposed for residential alleys, where cars are permitted but must yield to all pedestrian traffic (Fig. 5.16). These alleys are meant to have limited parking, leaving most space to recreation or social communal activity for neighbors.

Spatial Definition and Sense of Enclosure

Enclosure on Bedford Avenue is achieved using street trees and little to no building setback. Given the dimensions of the road and sidewalks with the addition of three to four-story buildings, a 1:2 building height to street width ratio is achieved (Fig. 5.15). Street trees add to the sense of enclosure, and arguably create closer to a 1:1 ratio between trees and buildings.

The plaza on Bedford Avenue between Trent Street and Kirkpatrick Street utilizes human scale dimensions outlined by Alexander and Gehl, with the width not exceeding 70 feet (Fig. 5.17). The central pool divides the space into several outdoor rooms, framed by two to four-story mixed-use buildings and plantings. This space is meant to act as a comfortable community meeting place, built to human scale dimensions.



Figure 5.14: Plan graphic of Bedford Avenue design recommendations. Graphic by author.

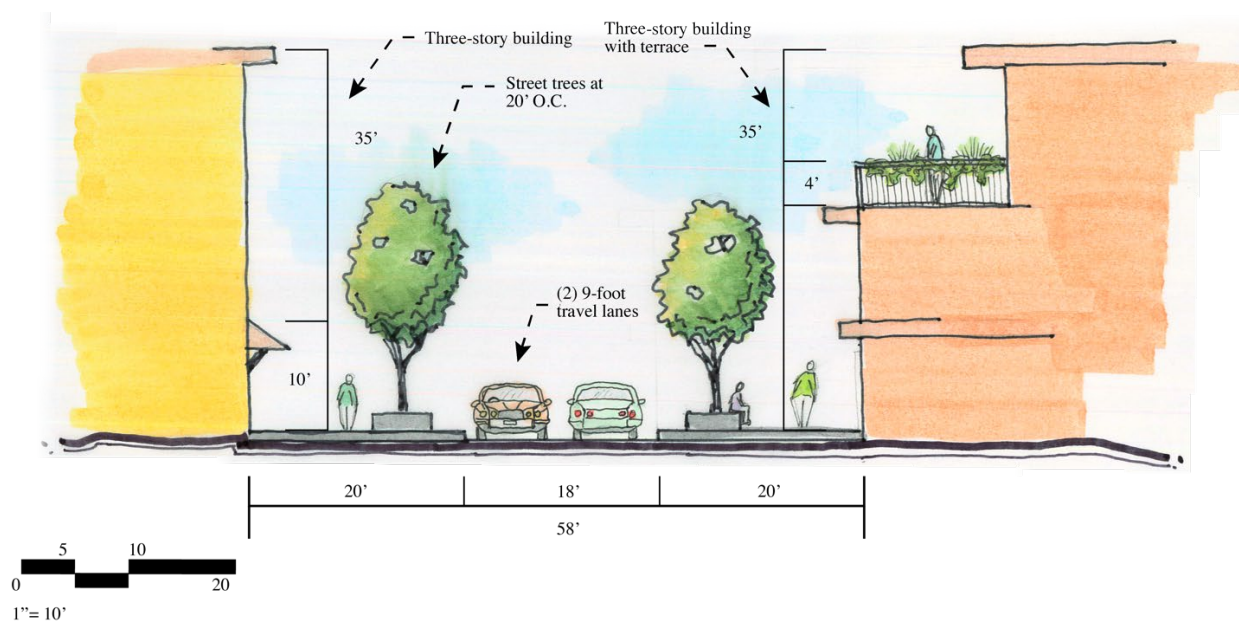


Figure 5.15: Section view of streetscape looking south on Bedford Avenue. Graphic by author.

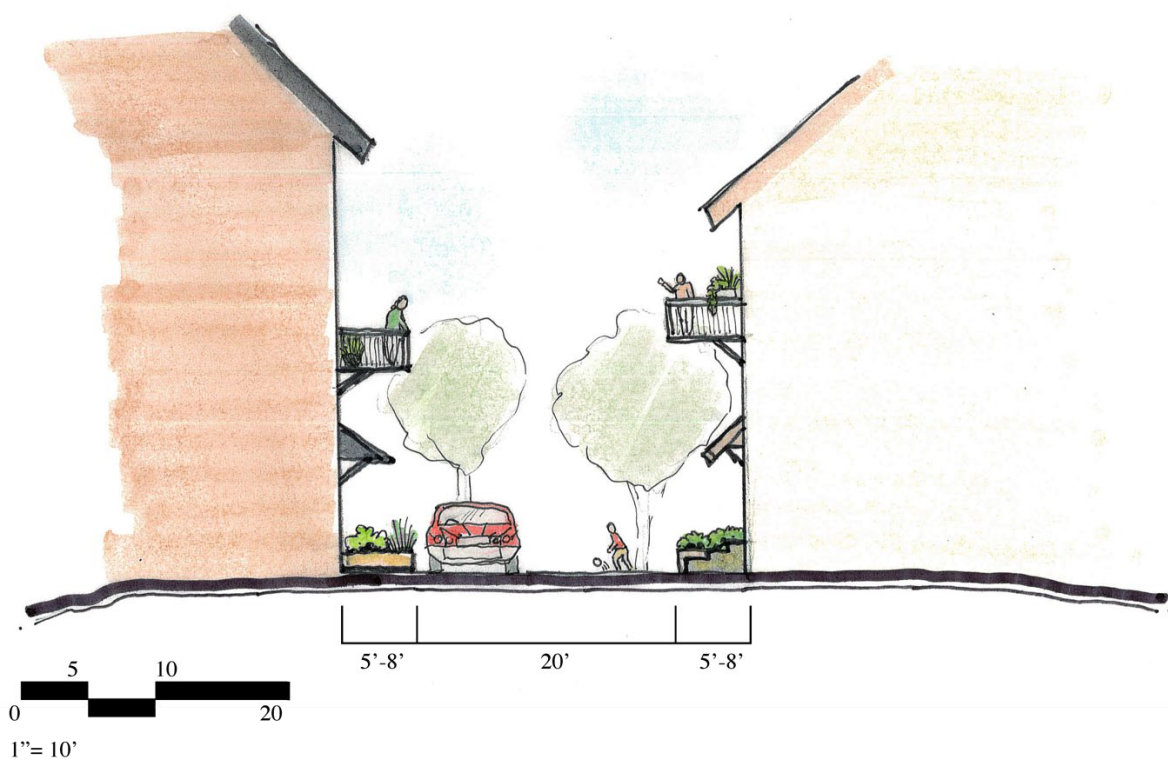


Figure 5.16: Section view of typical residential alley. Graphic by author.

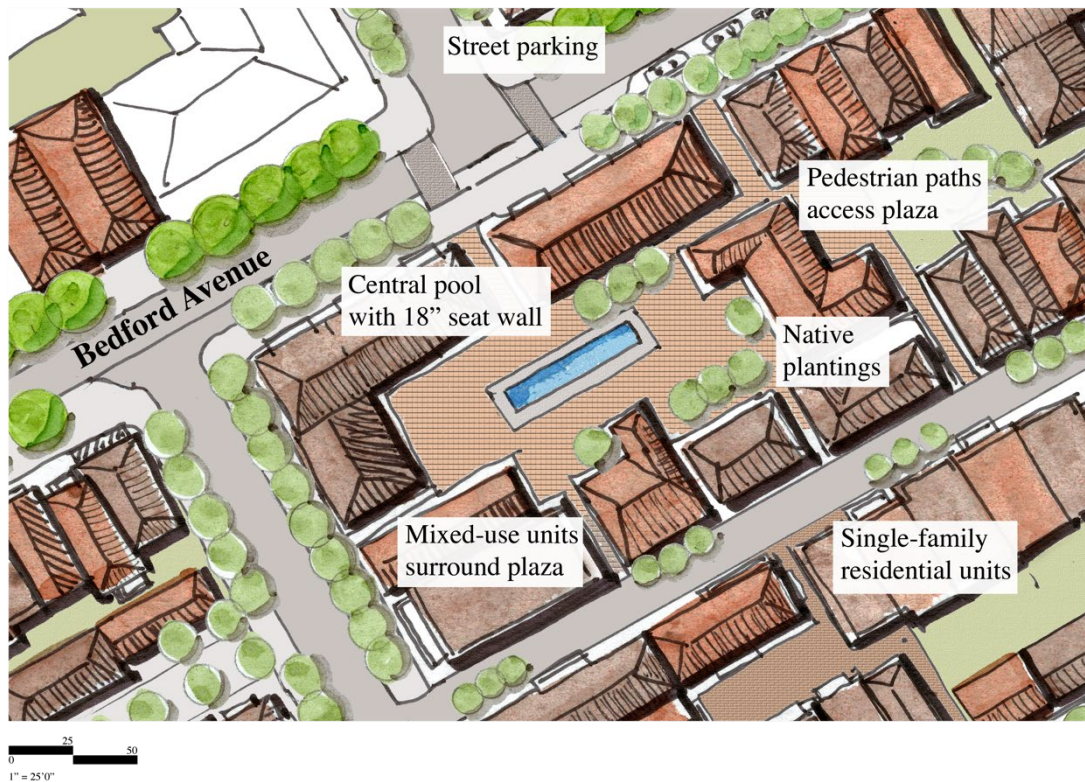


Figure 5.17: Plan view of plaza on Bedford Avenue. Graphic by author.

Access

Physical access is improved by the addition of side streets and the extension of existing alleys and streets. The new streets divide oversized blocks into smaller areas and create a more walkable network. Pedestrian circulation was especially considered in the design recommendations, adding several areas of pedestrian footpaths to provide mid-block crossing (Fig. 5.18). Physical access to important community assets, such as the Miller African-Centered Academy and the Ammon Recreation Center, was a major consideration in the selection of these blocks on Bedford Avenue.

Access in terms of use is considered in the recommendation of adding mixed-use units along Bedford, and the intersecting blocks. Mixed-use areas allows residents of the neighborhood to live and work in the same area, reducing commutes and improving access to job

opportunities. Bedford Avenue should house neighborhood services such as a small grocery, convenience stores, cafes, etc., along with commercial units and office space, with apartments above. This, in addition to other residential development, creates the density needed to support the local businesses and essential neighborhood services. This kind of development will address a current lack of neighborhood services in the Hill District, which often causes residents to travel outside the neighborhood (Cooper and Nagoda 2014).

The architecture should also address access to the street. The four-story limit proposed by Alexander prevents people from being too distant from activity on the street level (1977). Terraces and balconies (Figs. 5.15-16) act as connections to the street by allowing occupants to interact and observe street life. This same concept is also present in residential alleys (Fig. 5.16), where residents can see each other, socialize and even informally police their street from their home.

Visual Interest and Aesthetic Appeal

The proposed street designs should create a visually stimulating experience for pedestrians. Two to four-story buildings with interesting façades and many windows (full of Rapoport's "noticeable differences") should house community services and shops on Bedford, similar to the graphic of recommendations on Centre Avenue (Fig. 5.9) (1977). These buildings should also follow Gehl's recommendation of 16-20-foot-wide façades to allow the pedestrian to see something new every five seconds while walking down the street (2010). Balconies, terraces, and roof gardens also offer an aesthetically pleasing streetscape, while maintaining a social and physical connection to the street level.

Comfort

Comfort is offered through publicly provided seating on planters and other built features,

as well as privately provided seating at cafes and other neighborhood businesses (Fig. 5.15). Residential elements like stoops and porches also provide seating, vantage points, and act as points of social interaction with neighbors (Fig. 5.16). Spaces like the plaza in Figure 5.17 require seating and shade to be comfortable and attract visitors. These small elements combine to create a comfortable, inviting, human scale environment that people want to visit.

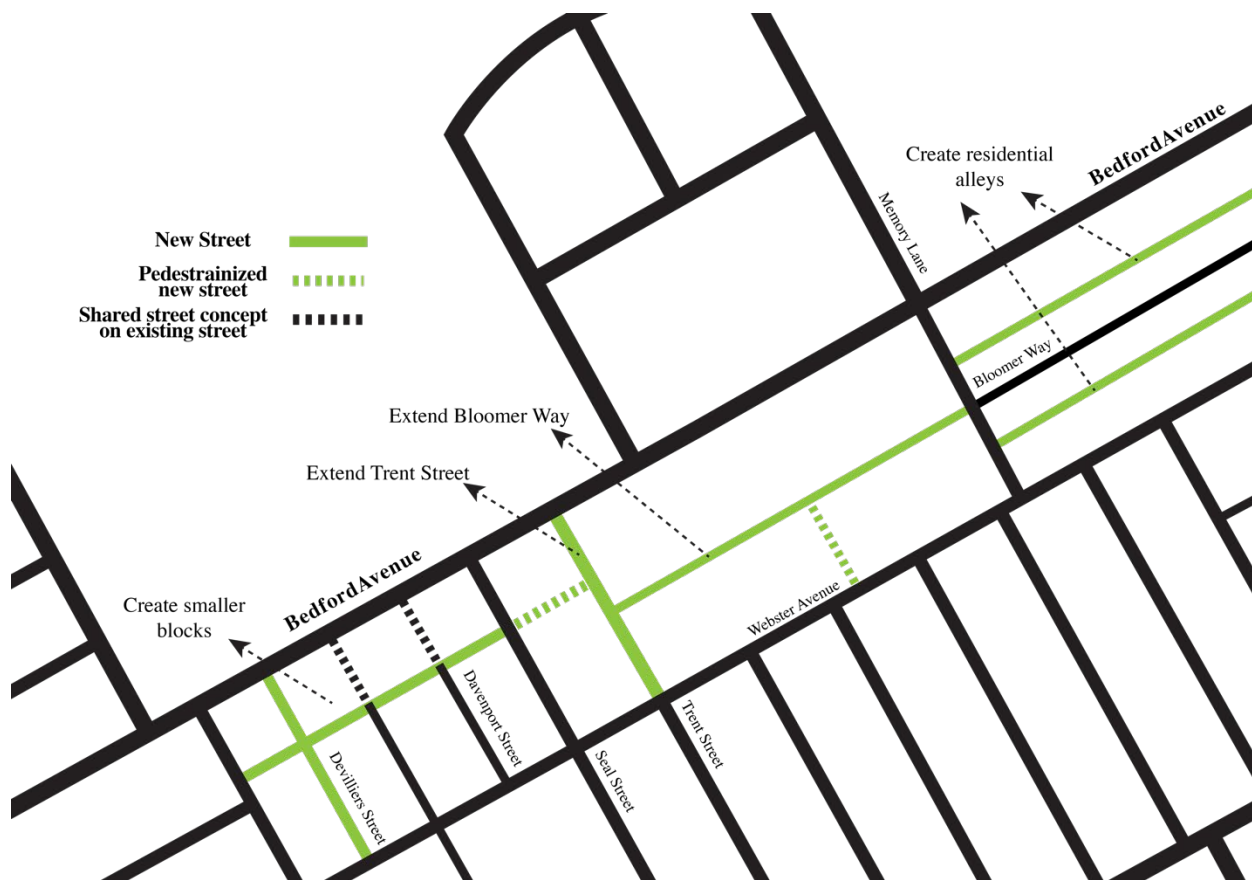


Figure 5.18: Figure ground diagram of existing and proposed streets. Image provided by author.

Conclusion

This chapter serves to offer design recommendations for the Hill District based on human scale sociability criteria assembled in Chapter 3, and case study examples presented in Chapter 4. With consideration of the existing Greater Hill District Master Plan, two streets were selected as

design targets in Pittsburgh's Hill District: Centre Avenue, a commercial street, and Bedford Avenue, a residential street.

Critique and Future Directions

The author believes the proposed design recommendations in this chapter communicate the human scale sociability criteria described previously in the thesis, and offer a context-sensitive design approach to redeveloping the Hill. Thoughtful consideration of the human scale was made from the larger context to small scale, intimate spaces on the two application sites. While the design was mainly informed by these criteria and the existing master plan, it did not consider current community input. Community members were not consulted due to time and labor limitations and failed attempts to contact community representatives. Community input on human scale and sociability, in the form of a design charrette, would be a valuable supplement to the criteria developed in this thesis. A survey of local existing businesses and residents would offer insights into the current conditions, and better address current neighborhood concerns. This could inform the design recommendations to better fit the specific community. Long-term involvement from the community members from the start could guide the research to better fit community needs. If the community was involved in the design process, they may have a stronger attachment to the design. Additionally, research was not conducted to find traffic flow information for Centre and Bedford Avenue; the design did not consider traffic flow data in the redesign of the streets. This information could have informed chosen travel lane widths on these streets to better suit existing traffic flows. However, consideration was made to accommodate existing public transit options for the area, specifically the Pittsburgh Port Authority buses.

Future research considerations could be to conduct site observation on sociability of the area and nodes of activity. This could inform the author of a better targeted design area. Site

observation could be used in tandem with community meetings or charrettes to pinpoint areas of the neighborhood prime for redevelopment, informed by community needs. This could result in a context-sensitive design that is responsive to community history and culture.

The purpose of the human scale sociability criteria was to inform design of sociable streets. Are these criteria an appropriate response to the research question, *Which elements of the street promote sociability, and what are the physical qualities of a social street?* The goal of compiling these criteria was to develop a framework for sociable street design that could be applied to redevelopment efforts in the Hill District. The author believes these criteria established in Chapter 3 could be applied to other sites as well, given that the criteria are not specific to one location and respond to general usage of the street as a site of social interaction. However, the design recommendations in this chapter are specific to reestablishing a human scale in the Hill District itself.

Reflection

The inspiration for this research came from a personal desire to study the unique and special characteristics of neighborhoods and the built environment. The story of the Hill District's heyday and later destruction was told to me at a young age. Seeing the Teenie Harris photo archive at the Carnegie Museum of Art was a memorable experience, and it shows the human aspect of the Hill District in the images of jazz clubs, street celebrations, etc. I was interested in exploring how the vibrant social life in these images was related to the nature of the built environment and the landscape. Through my initial research, I discovered that the influence on the neighborhood's social life that I observed was partially due to the scale of its urban fabric. This led me to find out how I could quantify or describe the human scale in terms of design recommendations, which resulted in the presented criteria in this thesis.

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APPENDIX A

HUMAN SCALE SOCIABILITY CRITERIA FROM THE LITERATURE

Table 1: Commercial Street – Measurable Qualities

| COMMERCIAL STREET - MEASURABLE QUALITIES | | | | | | | |
|--|---|---|---|---|--|--|-------------------------|
| ACCESS | | SAFETY | | SPATIAL DEFINITION AND SENSE OF ENCLOSURE | | VISUAL INTEREST AND AESTHETIC APPEAL | |
| QUALITY | SOURCE | QUALITY | SOURCE | QUALITY | SOURCE | QUALITY | SOURCE |
| Small block size - no larger than 2.5 acres, average length and width of 330' | (Campoli 2012, Dover and Massengale 2014) | Low speed limits and other traffic controls | (Appleyard 1981, Dover and Massengale 2014) | Building height to street width ratio - between 1:1 to 1:4, preferably | (Dover and Massengale 2014, Hedman and Jaszewski 1984, Jacobs 1993, Sitte 1965), | Average building width 16-20' to hold visual interest at walking speed (3 mph) | (Gehl 2010) |
| Number of connections - intersection density; intersections per sq. mile | (Campoli 2012, Dover and Massengale 2014) | Narrow drive lanes: 9-11 feet | (Appleyard 1981, Dover and Massengale 2014) | Public squares: short side should not exceed 70' across; 45-60' across ideally. | (Alexander et al. 1977) | Small shop sizes about 50 square feet | (Alexander et al. 1977) |
| Parcel/lot size: smaller parcels enable more variety of use. | (Campoli 2012) | Raised walk: 12-18"; allows pedestrians to see over cars. | (Alexander et al. 1977) | 4-story building height limit: maintains ratio | (Alexander et al. 1977) | | |
| Number of windows, doors, balconies, storefronts | (Dover and Massengale 2014, Jacobs 1961) | Road crossing should be 6-12" above road surface with slope not exceeding 1:6 | (Alexander et al. 1977) | Number of stories in a given area should not vary greatly | (Alexander et al. 1977) | | |
| Activity centers or nodes: about 300 yards apart | (Alexander et al. 1977) | Sidewalks should be 15' in width ideally on shopping streets; 12' minimum | (Alexander et al. 1977, Appleyard 1981, Campoli 2012) | Building setbacks: 0', should be built to the paths. Curves in the paths will create variation. | (Alexander et al. 1977) | | |
| Road crossing should be raised 6-12" above road surface with slope not exceeding 1:6 | (Alexander et al. 1977) | Road crossings should be 200-300' apart at most | (Alexander et al. 1977) | Squares & plazas: average number of people x 150-300 to determine area in sq. feet; prevents space from looking deserted. | (Alexander et al. 1977) | | |
| Road crossings should be 200-300' apart at most | (Alexander et al. 1977) | Sidewalks should be raised 18-30" above road for people to see over cars and feel in control | (Alexander et al. 1977) | | | | |
| Sidewalks should be 15' in width ideally; 12' minimum | (Alexander et al. 1977, Appleyard 1981, Campoli 2012) | Squares & plazas: average number of people x 150-300 to determine area in sq. feet; prevents space from looking deserted. | (Alexander et al. 1977) | | | | |

Table 2: Commercial Street – Non-Measurable Qualities

| COMMERCIAL STREET - NON-MEASURABLE QUALITIES | | | | | | | |
|---|--|--|--|---|--|--|--|
| COMFORT | | SAFETY | | SPATIAL DEFINITION AND SENSE OF ENCLOSURE | | VISUAL INTEREST AND AESTHETIC APPEAL | |
| QUALITY | SOURCE | QUALITY | SOURCE | QUALITY | SOURCE | QUALITY | SOURCE |
| Shade from awnings, trees, arcades, etc. | (Dover and Massengale 2014, Mehta 2013) | Barriers from traffic: bollards, raised curbs, parked cars. | (Appleyard 1981) | Sidewalks, trees, and buildings form parallel continuous edge | (Dover and Massengale 2014) | “Noticeable differences:” details in the built environment that hold people’s interest | (Gehl 2010, Rapoport 1977) |
| Sun in cold climates - important on shopping streets; keep buildings to the north of open space | (Alexander et al. 1977, Dover and Massengale 2014) | Perceived safety: upkeep of properties on street; presence of people | (Mehta 2013) | Street trees | (Dover and Massengale 2014, Jacobs 1993) | Interest, memorable: richness, texture, character | (Dover and Massengale 2014) |
| Quality of seating provided, adjustable or fixed | (Mehta 2013, Whyte 2001) | Presence of many windows, doors, balconies, storefronts | (Dover and Massengale 2014, Jacobs 1961) | Scale of façade details | (Dover and Massengale 2014) | Mixed uses - many reasons for people to be there | (Campoli 2012, Dover and Massengale 2014, Jacobs 1961) |
| Provide roof gardens as extensions of upper-story rooms. | (Alexander et al. 1977) | Sidewalks flush with road (shared street/woonerf) make drivers slow down and operate cautiously. | (Appleyard 1981) | Open space should be partially open and closed; open space should be broken up into smaller spaces. | (Alexander et al. 1977) | Variation in building materials | (Dover and Massengale 2014) |
| Seats in the form of stairs give people a vantage point to watch street action | (Alexander et al. 1977) | | | Paths should swell out in areas where there is seating and places to stay. | (Alexander et al. 1977) | Buildings should be constructed in complexes; broken into visible parts | (Alexander et al. 1977) |
| | | | | Place something in the center of public space to define it; where it falls between paths. | (Alexander et al. 1977) | Surround plazas/squares with activity and space to partly enclose activities. | (Alexander et al. 1977) |

Table 3: Residential Street – Measurable Qualities

| RESIDENTIAL STREET - MEASURABLE QUALITIES | | | | | | | |
|---|---|---|---|---|---|--|--|
| ACCESS | | COMFORT | | SAFETY | | SPATIAL DEFINITION AND SENSE OF ENCLOSURE | |
| QUALITY | SOURCE | QUALITY | SOURCE | QUALITY | SOURCE | QUALITY | SOURCE |
| Walking distance to destinations: 0.5 miles or less | (Campoli 2012) | Emission free air | (Appleyard 1981) | Low noise: levels of noise as low as 35 dbA can disturb sleep; speech interference inside the home can occur at 45 dbA. | (Appleyard 1981) | Building height to street width ratio - between 1:1 to 1:4, preferably | (Dover and Massengale 2014, Hedman and Jaszewski 1984, Jacobs 1993, Sitte 1965), |
| Distance to transit: Within 0.5 mile radius (10 minute walk) | (Campoli 2012) | Low noise: levels of noise as low as 35 dbA can disturb sleep; speech interference inside the home can occur at 45 dbA. | (Appleyard 1981) | Low speed limits or traffic controls: 10-15 mph, especially on streets with many children; 20 mph maximum. | (Appleyard 1981, Dover and Massengale 2014) | 4-story building height limit: maintains ratio | (Alexander et al. 1977) |
| 4-story building height limit: maintains access to street level | (Alexander et al. 1977) | Sidewalks should be 15' in width ideally; 12' minimum | (Alexander et al. 1977, Appleyard 1981, Campoli 2012) | Sidewalks should be 15' in width ideally; 12' minimum | (Alexander et al. 1977, Appleyard 1981, Campoli 2012) | Number of stories in a given area should not vary greatly | (Alexander et al. 1977) |
| Small block size - no larger than 2.5 acres, average length and width of 330' | (Campoli 2012, Dover and Massengale 2014) | Seat walls should be 16” high at least 12” deep. | (Alexander et al. 1977) | Light traffic: ideally not exceeding 2,000 cars per day in presence of children. | (Appleyard 1981) | Public space dimensions: average number of people x 150-300 to determine area in sq. feet; prevents space from looking deserted. | (Alexander et al. 1977) |
| | | | | Narrow drive lanes: 9-11 feet | (Appleyard 1981, Dover and Massengale 2014) | | |
| | | | | Raised walk: 12-30" makes people feel safer because they can see over cars in higher traffic areas. | (Alexander et al. 1977) | | |

Table 4: Residential Street – Non-Measurable Qualities

| RESIDENTIAL STREET - NON-MEASURABLE QUALITIES | | | | | | | | | |
|--|--|---|---|--|------------------|---|-----------------------------|--|-----------------------------|
| ACCESS | | COMFORT | | SAFETY | | SPATIAL DEFINITION AND SENSE OF ENCLOSURE | | VISUAL INTEREST AND AESTHETIC APPEAL | |
| QUALITY | SOURCE | QUALITY | SOURCE | QUALITY | SOURCE | QUALITY | SOURCE | QUALITY | SOURCE |
| Accessible for people with handicaps and elderly | (Appleyard 1981) | Cleanliness: street and sidewalks are kept clean and free of debris | (Appleyard 1981) | Safe places for play | (Appleyard 1981) | Scale of façade details | (Dover and Massengale 2014) | “Noticeable differences:” details in the built environment that hold people’s interest | (Gehl 2010, Rapoport 1977) |
| Outdoor activities: opportunities for outdoor activity such as outdoor seating, street vendors, etc. | (Appleyard 1981) | Shade from awnings, trees, arcades, etc. | (Dover and Massengale 2014, Mehta 2013) | Parked cars can be clustered to minimize area used by parking. | (Appleyard 1981) | Group buildings to create positive open space with perceived boundaries | (Alexander et al. 1977) | Interest and memorability: richness, texture, character of environment | (Dover and Massengale 2014) |
| Areas for play and recreation | (Alexander et al. 1977, Appleyard 1981) | Provide roof gardens or balconies as extensions of upper-story rooms. | (Alexander et al. 1977) | Sidewalks flush with road (shared street/woonerf) make drivers slow down and operate cautiously. | (Appleyard 1981) | Open space should be partially open and closed; open space should be broken up into smaller spaces. | (Alexander et al. 1977) | Variation in building materials | (Dover and Massengale 2014) |
| Semi-public space for interaction with street: stoop, porch, etc. | (Alexander et al. 1977, Campoli 2012, Jacobs 1993) | | | | | Paths should swell out in areas where there is seating and places to stay. | (Alexander et al. 1977) | | |
| Parking: permit parking can ensure adequate parking is provided for residents. | (Appleyard 1981) | | | | | | | | |

APPENDIX B

HUMAN SCALE SOCIABILITY CRITERIA APPLIED TO CASE STUDY EXAMPLES

Table 5: Worth Street & Hibiscus Place

| Worth Street & Hibiscus Place | | | | |
|---|---------------------------------------|---|---|--|
| Access | Comfort | Safety | Spatial Definition and Sense of Enclosure | Visual Interest and Aesthetic Appeal |
| Mid-block pedestrian crossings | Shade from street trees | Wider sidewalks, narrower lanes slow traffic; | Buildings forming continuous street wall | Utilities underground, minimal road signs |
| Wide sidewalks: 12' in most areas | Shaded arcades in mid-block crossings | Pedestrian mid-block crossings offer routes away from vehicular traffic | Buildings are 1-5 stories tall | Simple facades; less is more approach |
| Permeable storefronts: many windows and doors | Seating provided on pedestrian island | Bollards used to separate drive lanes from sidewalk | 1:1-1:2 street width ratio is maintained | Equally spaced trees: uniformity offers collected appearance |

Table 6: Bell Street Park

| Bell Street Park | | | | |
|--|---|---|---|---|
| Access | Comfort | Safety | Spatial Definition and Sense of Enclosure | Visual Interest and Aesthetic Appeal |
| Single 10' travel lane for cars, buses, bikes, and pedestrians | Shade from street trees | Adds safe open space/recreation space since no land for park | Buildings forming continuous street wall | Materials made 4'x4' grid of pavers |
| 4' on either side of travel lane for wider buses & emergency vehicles | Reclaimed driving space for pedestrians | Meandering travel lane to slow traffic | 1:1-1:2 street width ratio is maintained | "Grid" was set at diagonal: emphasizes stores and amenities over through-travel |
| Signage indicates the entrance | Meandering zones for seating, planters, art | Elevates street into level continuous surface to slow traffic (shared street) | | Meandering zones for seating, planters, art |
| Important corridor for buses (300 pass through a day): maintains functionality | | | | |

Table 7: Roslyn Place

| Roslyn Place | | | | |
|---|--|--|--|--|
| Access | Comfort | Safety | Spatial Definition and Sense of Enclosure | Visual Interest and Aesthetic Appeal |
| 2 Blocks from neighborhood commercial street (Walnut St) | Shade from street trees | Narrowness of street slows traffic | Houses forming continuous street wall | Architectural variations: similar but there are 5 different styles |
| Windows in houses are open to street (eyes on the street) | Sun is let in in the winter | Street parking offers buffer between pedestrian and drive lane | 1:2 street width ratio is maintained | Use of rich materials |
| People can be easily seen from homes, increases likelihood of interaction | Street parking offers buffer between pedestrian and drive lane | Windows in houses are open to street (eyes on the street) | Old street trees frame street and define space | Street is made of wooden blocks |
| 45' from door to opposite sidewalk | | 45' from door to opposite sidewalk | | |

Table 8: Bartram Street & Brasfield Square

| Bartram Street & Brasfield Square | | | | |
|--|---|--|---|---|
| Access | Comfort | Safety | Spatial Definition and Sense of Enclosure | Visual Interest and Aesthetic Appeal |
| Designed to engage neighbors in activity and contact with one another in a fine-grained urban fabric | Shade from street trees | Narrow streets (10' drive lane) and smaller turning radii: slows traffic | Houses forming continuous street wall | Unified architectural style modeled after Chicago's Lincoln Park Neighborhood |
| Live/work buildings line square: "maximizing the mixing" of daily activities | Street parking with planting strips, sidewalks, stoops, and dooryards | Street parking offers buffer between pedestrian and drive lane | 1:2 street width ratio is maintained | View from Bartram St. opens to view of slightly sunken park |
| People can be easily seen from homes, increases likelihood of interaction | Street parking offers buffer between pedestrian and drive lane | Vehicular traffic was not a priority but still accommodated | Spatial enclosure around square | Street is made of wooden blocks |
| | | Dimensions of square require motorists to stay alert | Connected yet varied spatial sequences | Noticeable differences in facades |