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Creating Better Public Housing in American Cities: A Study of Circulation and
Common Spaces of Public Housing

A thesis submitted in partial fulfillment of the requirements of the Honors
Program of the Department of Architecture in the School of Architecture,
University of Arkansas.

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Abstract

This thesis will analyze common spaces and circulation spaces in terms of configuration (in relation to each other) and quality (whether they are interior, exterior, or allow space for interaction between residents) in an attempt to determine how stairs, elevators, hallways, and common spaces impact the level of community within a public housing project. Community in this study refers to lasting relationships among residents living in the same housing project. The goal is to answer the question “What role do circulation and common spaces play in the success or failure of a public housing project?” and to determine the best design practices to give architects a guideline for future designs of public housing.

Fifteen housing projects throughout New York City, Great Britain, Germany, and the Netherlands were chosen to represent three housing typologies commonly utilized to design public housing. These typologies include courtyard, tower, and slab types. Each typology is analyzed based on its type and configuration of circulation spaces and the characteristics of common spaces (whether they are indoor, outdoor, and how they relate to circulation spaces). To determine the success or failure of the establishment of community within specific housing projects, testimonials are taken from online sources such as group facebook pages and newspaper articles to gain a better understanding of residents’ opinions of living in specific projects.

Introduction

Popular considerations of public housing are typically negative. Public housing is unfairly associated with undesirable superblocs and stereotypically characterized as densely populated towers of welfare recipients where crime rates are high and living conditions are subpar. In reality, 1.1 million of today's 1.4 million American public housing units are located in low-rise buildings or single-family homes located in both small towns and cities,¹ and there is no evidence that low-income housing brings crime to a neighborhood.² While developments³ such as Queensbridge Houses have been cited as some of the most infamous U.S. public housing projects, people who have lived in Queensbridge Houses note that the experiences and sense of community there were stronger than most other places they have lived.⁴

Public housing in the United States has its roots in the need to remedy the faults of tenement housing. The goal to create housing with provision of basic necessities like light, ventilation, and indoor plumbing was first addressed by New York State in the New York Tenement Law of 1901. After a national study done in multiple cities across the United States in 1934 revealed that 17.1 percent of residential apartment buildings in urban locations were overcrowded,

¹ Bloom et al., *Public Housing Myths: Perception, Reality, and Social Policy*. Cornell University, 2015. Accessed August 30, 2016. <http://O-site.ebrary.com.library.uark.edu/lib/uark/reader.action?docID=11040190>.

² "Myths and Facts about Affordable Housing" *Affirmed*. Accessed September 07, 2016. <http://www.affirmedhousing.com/resources/myths.html>.

³ Development- apartment complexes with identical or heavily identical buildings under one management.

⁴ "Queensbridge: The Other Side," *Youtube*, accessed September 12, 2016. <https://www.youtube.com/watch?v=hSgPBRZYgWo>

sixty percent needed repairs, nearly fifty percent had no furnace or boiler, twenty-four and a half percent had no bathtubs or showers, and nearly three hundred thousand dwelling rooms in New York City had no windows,⁵ it became clear that state initiatives to address housing problems were inadequate.

The first permanent federal response to the housing problems of the early twentieth century was the United States Housing Act of 1937, the primary goal of which was to provide safer and more sanitary living conditions to low-income families living in slums.⁶ As the goals of public housing changed over time, whether in response to war, civil rights, the economy, etc., new housing acts and federal actions were taken to address some of the needs for change. As needs for housing grew post-World War II, President Truman responded with the Housing Act of 1949, which called for “a decent and suitable living environment for every American family.”⁷

This study will focus on selected public housing projects that represent courtyard, tower, and slab typologies in an attempt to understand how basic design strategies from these three types influence the quality of public housing. In particular, this study will focus on specific design aspects such as hallways, stairs, elevators, and the provision of community spaces in the selected buildings in order to determine which typology fosters the greatest sense of community between its residents and leads to the creation of safe and resilient housing

⁵ Ebenstein, William. *The Law of Public Housing*. Madison: University of Wisconsin Press, 1940

⁶ Slums as defined by the Housing Act of 1937 are areas “where dwellings predominate which, by reason of dilapidation, overcrowding, fault arrangement or design, lack of ventilation, light or sanitation facilities, or any combination of these factors, are detrimental to safety, health, or morals.”

⁷ U.S. Govt. Print. Off. (1949) (enacted). Print.

projects. “Community” in this study is defined as lasting personal relationships among residents because of direct or indirect connections established by a common area of living.

Public housing projects that are located in rural and other non-metropolitan areas are not included in this study. This is because sixty percent of public housing units are located in central cities.⁸ Smaller developments such as single family homes and low rise developments are typically excluded because developments with less than twenty five units only make up twenty five percent of all public housing units in the United States.⁸ These exclusions are made in order to focus on projects that house a larger number of people, and therefore have the opportunity to create larger communities.

⁸ "CLPHA | Facts about Public Housing." CLPHA | Facts about Public Housing. Accessed November 16, 2016. http://www.clpha.org/facts_about_public_housing.

Chapter One: The History of Public Housing Design

There are several general approaches to the design of public housing projects such as courtyard projects, towers, and slabs in urban green spaces, and projects that work in conjunction with a city's existing fabric. These approaches lend themselves to different types of configuration of circulation and community spaces, which could have an impact on the level of success or failure of a given project.

Courtyard Type

The courtyard project is a commonplace type that has been used for public housing in the United States since the early twentieth century. This type is often praised for its ability to foster a sense of community among residents because the courtyard creates a shared common space that only the residents use. Often residents are required to circulate through the courtyard to get to their individual apartment from the city street, making the courtyard serve as a type of porch or foyer (Fig. 1). Negative aspects of courtyard projects include a problematic inward focus, the result of which is does not interact with the city street in the way that most buildings do through the use of doors, shop windows, and other activities. Instead, courtyard projects often create long stretches of building that do not interact with people on the city street and sidewalk, and are considered unfavorable by the larger community surrounding the project.⁹ Some

⁹ Davis, Sam. *The Architecture of Affordable Housing*. Berkeley: University of California Press, 1995

projects, like the Harlem River Houses in New York City, counter this alienation of the city street by incorporating ground level retail and services in order to maintain activity on the street while still allowing a more private entrance the residential portion of the structure through the courtyard.¹⁰

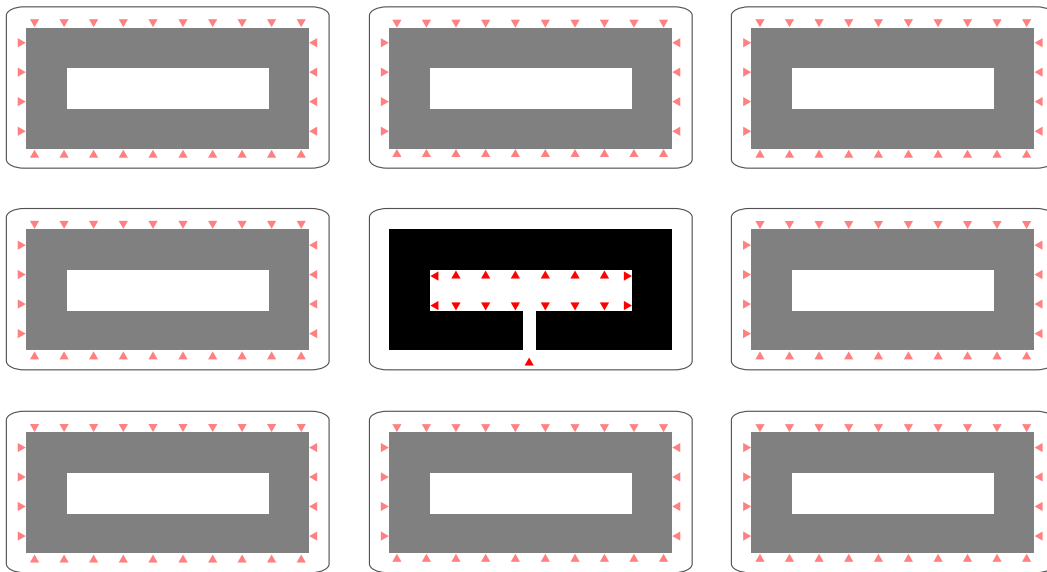


Figure 1 Courtyard type entrances compared to typical entrances on city blocks

Tower Type

The “tower in the park” concept that followed inverted the form of the courtyard project. These projects utilize green space that separates structures from the existing city context and each other. The concept establishes that the towers are situated in a green setting divorced from the city.¹¹ (Fig. 2) While on

¹⁰ Bloom, Nicholas Dagen, and Matthew Gordon. Lasner. *Affordable Housing in New York: The People, Places, and Policies That Transformed a City*. New Jersey: Princeton University Press, 2016

¹¹ Franck, Karen A., and Michael Mostoller. "From Courts to Open Space to Streets: Changes in the Site Design of U.S. Public Housing." *Journal of Architectural and Planning Research*, Public Housing Transformations-New Thinking about Old Projects, 12, no. 3 (1995): 186-220. Accessed

site building density is often relatively low (Jacob Riis Houses covered only twenty percent of its eleven and three quarter acre lot¹²), the housing authority has been able to maintain high levels of residential density by building more cost-effective tower structures throughout the site. However, towers seldom offer amenities that people desire, e.g., families with children who had to depend on elevators and unobserved hallways to access their apartments.⁷ Rather than serving as a community space as in the courtyard type, the green space between residential buildings is often considered a “no-man’s-land-unsafe, dreary, and uninviting.”⁷ New York City’s Jacob Riis Houses, completed in 1949, with six towers covering only twenty percent of the land, updated its green spaces a number of times in an attempt to negate the crime and tensions that were occurring during the 1960s and 1970s.

September 05, 2016. http://www.jstor.org/stable/43029163?seq=1&cid=pdf-reference#references_tab_contents.

¹² Bloom, Nicholas Dagen. *Public Housing That Worked: New York in the Twentieth Century*. Philadelphia: University of Pennsylvania Press, 2008.

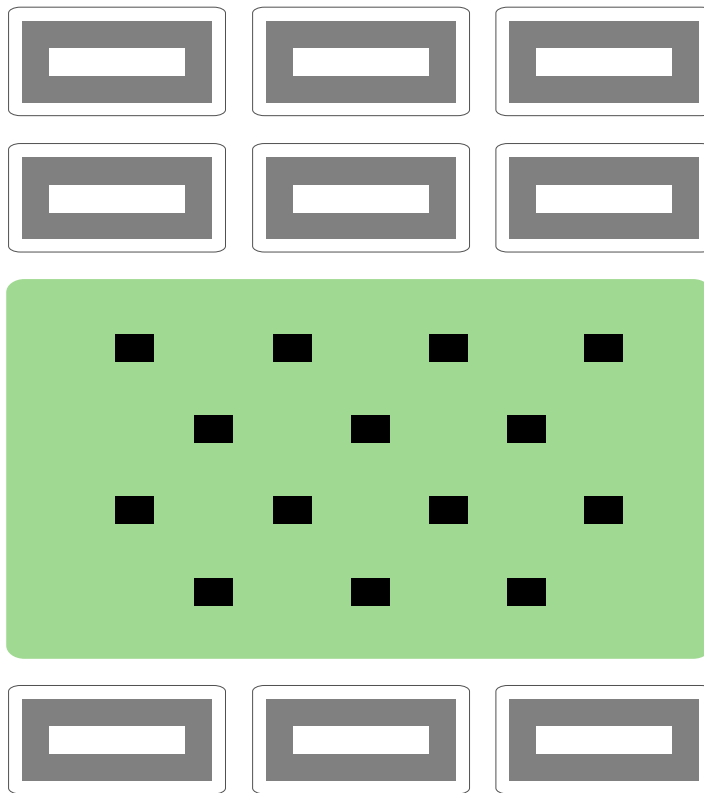


Figure 2 Tower scheme in comparison to normal city block

Slab Type

Slab type projects are similar to towers in that they are often more physically isolated from the city than block defining structures such as courtyard projects (Fig.3). These projects are not as tall as towers and typically offer more internal circulation space than other types of projects. These projects sometimes also include green spaces for residents, although they are not as extensive as green spaces in tower projects. Robin Hood Gardens, done by Alison and Peter Smithson, utilizes the slab type to create ample circulation spaces that also double as social spaces for residents. In New York City the slab type is combined with the tower type to create projects like Baruch Houses, which use two

entrances for an entire building rather than five or more entries per building as typically seen in projects such as Queensbridge Houses and Harlem River Houses.

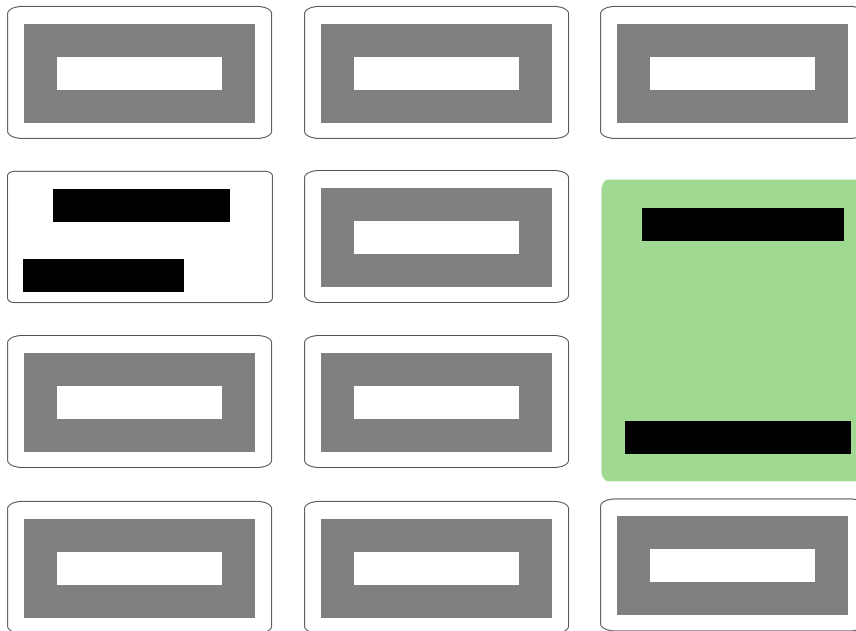


Figure 3 Slab types in comparison to typical city block

Theories of Public Housing

Alison and Peter Smithson disagreed with housing ideas such as the tower in the park, which they believed disconnected people from each other and hindered the creation of community within a building. They also believed that housing should be integrated with the rest of the city to create a successful community. Rather than being isolated from the rest of the city as is the case with a number of public housing projects such as the Baruch Houses and Queensbridge Houses, Team X states that “the assumption that a community can be created by geographical isolation is invalid” and that “real social groups

cut across geographical barriers.”¹³ The key to creating social relations is to link communities together rather than to isolate them.

At the scale of the individual building, one method for establishing community, according to the Smithsons, is the creation of horizontal social space. For the Smithsons’ this space is referred to as a “street in the air”¹⁴ and is large enough to promote social interactions such as children playing and adults interacting as they may do on a normal public street. These streets are essentially large hallways that residents must utilize in order to access their apartment unit. In the case of Golden Lane Housing, a competition entry for London’s East End, the eleven-story project was serviced by three “streets in the air” that serviced nine of the stories, while the bottom two stories were accessed directly from ground level (Fig 4). Every three floors worth of residents were exposed to each other because of they had to use these streets to access their unit, which increased the likeliness of social interaction and by extension the creation of a larger community within the project.

Le Corbusier’s Unite d’Habitation also utilizes a common space for residents much like the Smithson’s “streets-in-the-air” although there were differences between the two. The Unite d’Habitation’s common areas, often referred to as galleries, are located on the interior of the building while the Smithson’s design moves their streets to the facades of their buildings. The

¹³ Smithson, Alison. *Team 10 Primer*. Cambridge: MIT Press, 1968.

¹⁴ Smithson, Alison Margaret., Peter Smithson, Dirk Van Den Heuvel, Max Risselada, and Beatriz Colomina. *Alison and Peter Smithson: From the House of the Future to a House of Today*. Rotterdam: 010 Publishers, 2004.

galleries in the Unite d'Habitation are placed every two to three stories, servicing more apartment units than a project with units and hallways on every level (Fig. 5). While the streets of Golden Lane Housing and eventually Robin Hood Gardens were meant to be both social and circulation spaces, the galleries of Corbusier's Unite d'Habitation were also accompanied by a designated social space on the roof of the garden for people to gather and socialize.

One approach to the design of public housing in New York City is to minimize hallways and use only vertical means (stairs and elevators) to access apartment units. This approach typically limits the number of apartments that can be served by a common landing to two or four, although in Queensbridge Houses this number goes up to five and six units because of the y shaped design of the building. The landing space of a stairwell and elevator is not large enough and does not serve enough units to create a true sense of community within one building, let alone an entire complex, of residents.

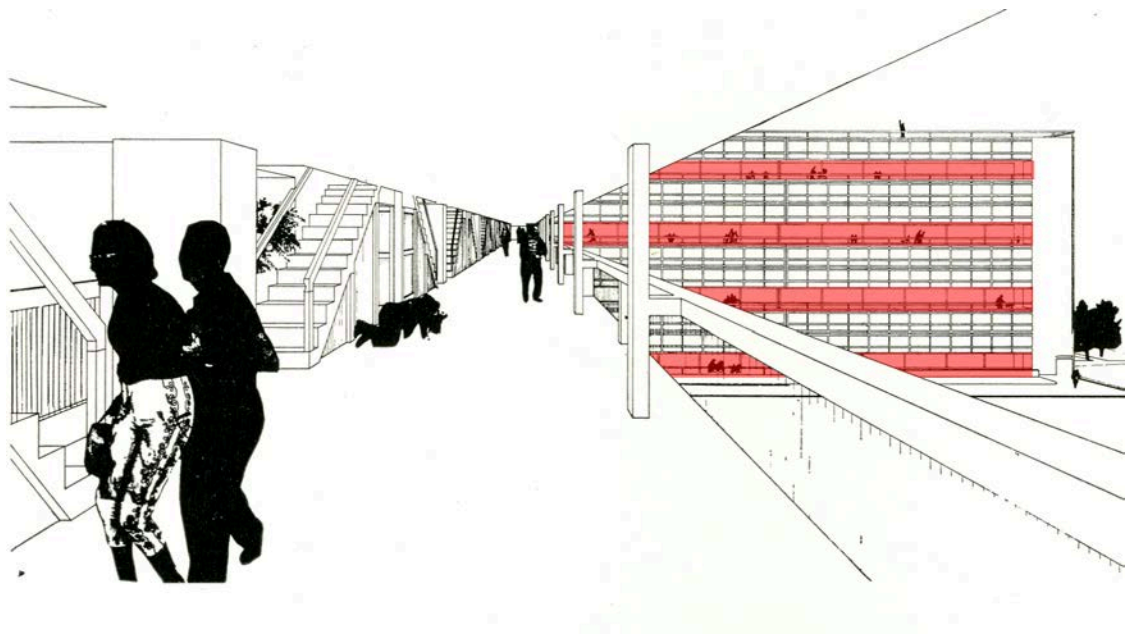


Figure 4 Streets in the sky of Golden Lane Housing

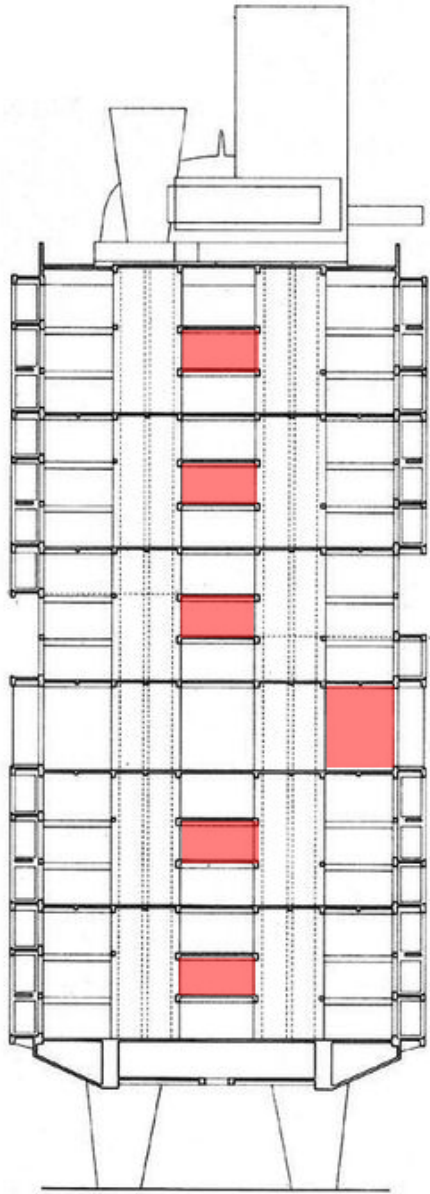


Figure 5 Unite D'Habitation section showing public gallery spaces

Chapter Two: Precedents

In its early stages research for this project started with an emphasis on New York City public housing. This is because New York City has three hundred twenty eight public housing developments, the largest of any city in the United States, and it was believed that the city would provide an adequate number of precedents fitting each of the building typologies represented in this study. Due to an inability to acquire the proper documentation for many of the projects in New York City, additional affordable and social housing precedents have been chosen from the Floor Plan Manual and online sources.

Projects will be analyzed in regards to standards set forth by Alison and Peter Smithson, including the nature of a project's common spaces (planned or residual) and the amount of hallway and stairwells each building is serviced by and their ability to foster the creation of community. Designated common spaces and community areas will be noted as well, since these spaces could have an effect on the overall sense of community within a housing development.

In addition to the analysis of the built project, testimonials from people living in and familiar with various projects throughout the three types are utilized in an attempt to portray some of the feelings that these people have living in these communities. Where reviews for each specific building in a type cannot be found, reviews from available projects are applied to the types as a whole.

Courtyard Type

Queensbridge Houses

Architect: William F.R. Ballard

Location: New York City

Date Constructed: 1940

Number of Units: 3,149

The Queensbridge housing development (Fig. 6) consists of Queensbridge North and Queensbridge South. Together, they form the largest public housing development in North America. Although this development is not made up of one building defining a courtyard, the overall site design implies a courtyard scheme with building entrances typically found facing inner courtyard spaces rather than the main city street (Fig. 8). Its Y-shaped building plans distinguish it from typical courtyard developments.

The circulation in Queensbridge houses is limited to stairwells and elevators. Each stairwell and elevator services approximately thirty to thirty six apartments depending on apartment layout within the building. At every floor level the stairwell landing services either five or six apartments (Fig. 9). These stairwells are accessed directly from the outside of the building with no connection to one another in terms of a lobby or other common ground floor area, limiting residents' opportunity to interact with people that reside in their building unless they cross paths outside or live in an apartment serviced by the same set of circulation. Entries to the buildings are so scattered that in most instances one entrance to a building cannot be seen from another entrance to

the same building. The set up of strictly vertical connections between units offers little opportunity for residents to interact with each other and stifles the chances of interaction between more than a few people and families that reside in the same section of a building.

While the Y-shaped design of the buildings at Queensbridge Houses were utilized by William F.R. Ballard, Frederick G. Frost, Henry S. Churchill, and Burnett C. Turner in order to “provide each apartment with the greatest possible cross ventilation, light, air, and privacy,”¹⁵ they also added to the social experience of residents. In a documentary about Queensbridge Houses Damell and James, former residents, talk about how the layout of the buildings actually led to them being able to talk to their friends without leaving their apartments.

“I’d sit in the living room window, and she’d sit in the kitchen window and we could talk. You know window to window.” –Damell

Queensbridge is one of the first developments in New York City, along with the Red Hook Houses to have a freestanding community center incorporated into the design. Prior to these projects community spaces were located in basements or other miscellaneous rooms of housing projects, which were found later to be unattractive. Federal funding at the time allocated funds for community spaces in relation to the total number of apartments within a project. With three thousand one hundred forty nine units, Queensbridge Houses has enough units to justify its freestanding community buildings. These freestanding community buildings are located around a plaza at the center of the

¹⁵ Bacon, Mardges. *Le Corbusier in America: Travels in the Land of the Timid*. Cambridge, MA: MIT Press, 2001.

site for Queensbridge Houses. Among these buildings there is a community center, nursery school, and a number of stores. This area, known as “The Hill” is also the area where drug deals typically occurred when the “Dream Team” was in control of the drug ring at Queensbridge Houses in the early 2000s.¹⁶

Many residents of Queensbridge Houses remember their time in the complex as some of the happiest times of their lives. In the documentary *Queensbridge: The Other Side*, one resident talks about how he had never been so close with African Americans and Hispanic people, saying that living together in the complex made them close and they “turned out to be good friends and that shattered any racism.”¹⁷ Another former resident, Mel Johnson, says that “The sense of community was incredible” and credits Queensbridge with his success on Broadway.

“If it wasn’t for Queensbridge I would never have gotten my first Broadway show. That’s directly related to Queensbridge because that’s where I took my tap lessons and I never took another tap lesson after that.”
-Mel Johnson

Only one review found from a resident living in Queensbridge Houses began to claim that living in the complex was not a good thing. Even then, the resident speaks that the community center and access to public transportation are

¹⁶ Stuart, Catriona. “‘Dream Team’ Drug Ring Is Dismantled.” - The New York Sun. February 18, 2005. Accessed November 08, 2016. <http://www.nysun.com/new-york/dream-team-drug-ring-is-dismantled/9484/>.

¹⁷ “Queensbridge: The Other Side,” *Youtube*, accessed September 12, 2016. <https://www.youtube.com/watch?v=hSgPBRZYgWo>

wonderful characteristics of the community, but that a lot of the tenants living in Queensbridge are “nasty and rude.”¹⁸

While Queensbridge Houses is known to some as one of the most infamous housing projects in the United States, people who live there think of it fondly. Walter, another resident featured in the Queensbridge documentary, comments on this perception:

“You don’t hear that Andy Walker was a councilman... You don’t hear that Bernadette Walker is the dean of students at LIU. All you hear is that there was a shooting last night.” –Walter



Figure 6 Queensbridge Houses

¹⁸ C., Randi, Angela G., Troy M., and Rebecca Q. "Queensbridge Houses - Long Island City - Long Island City, NY." Yelp. 2011. Accessed October 30, 2016. <https://www.yelp.com/biz/queensbridge-houses-long-island-city>.



Figure 7 Queensbridge Houses Play Ground

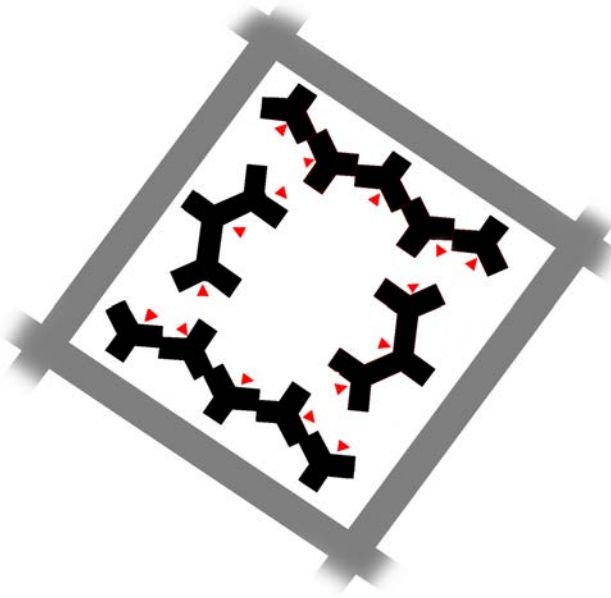


Figure 8 Building entries in Queensbridge Houses (away from city streets)

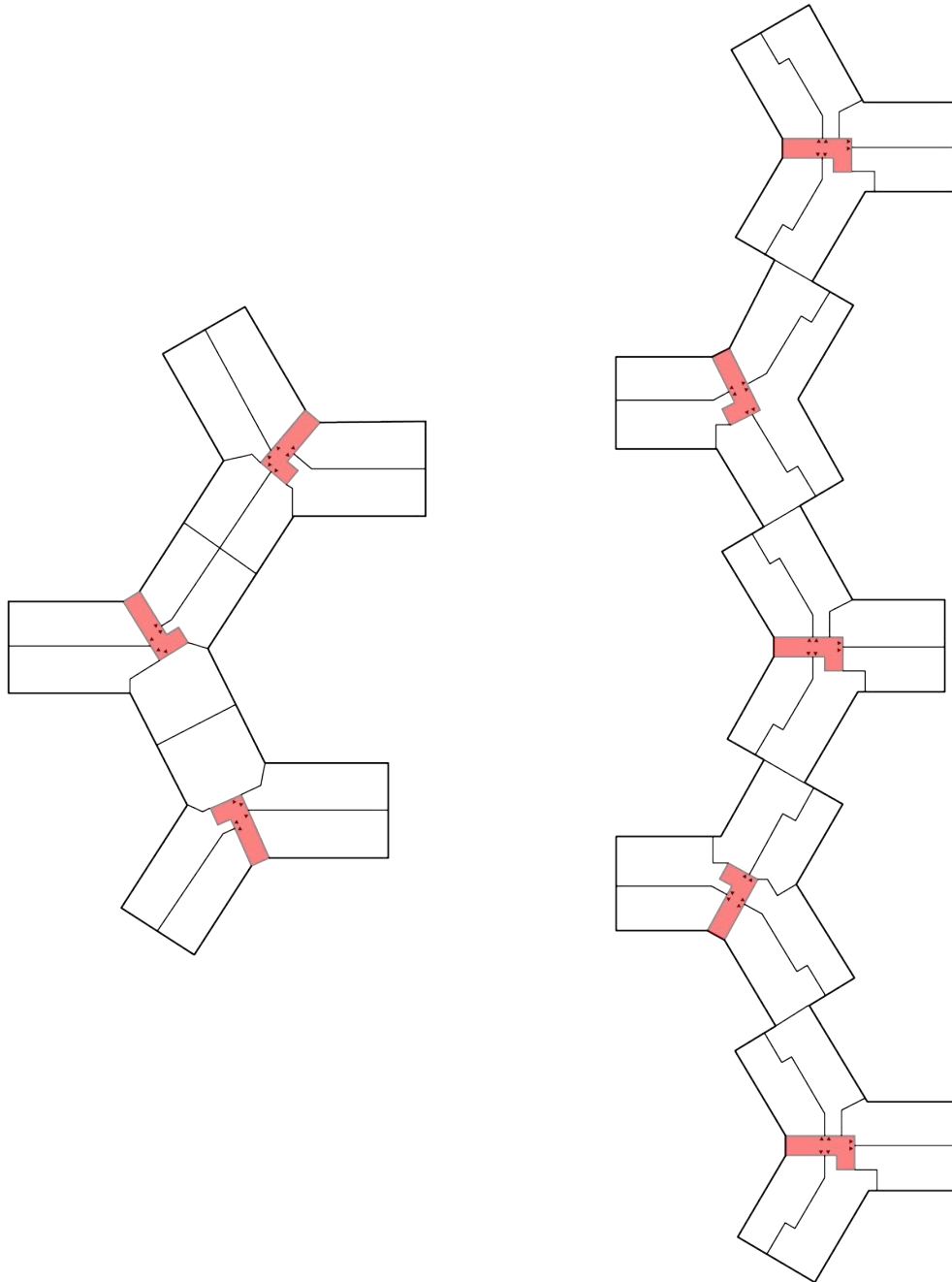


Figure 9 Queensbridge Houses building plans, highlighting vertical circulation

Harlem River Houses

Architect: Archibald Manning Brown
 Location: New York City
 Date Constructed: 1937
 Number of Units: 577

New York City's Harlem River Houses were opened in 1937 in response to demands for affordable housing for African Americans. The development is made up of three building masses that form multiple courtyards throughout the project, which serve as community spaces and places for children to play. The main, large courtyard area is known to residents as "the Pit" (Fig. 10) and is where they hold events such as Family Fun Days every August.¹⁹ While Harlem River Houses did not have a dedicated building to community activities like Queensbridge Houses, accommodations for childcare and healthcare were made in assorted rooms throughout the complex.²⁰ The design of Harlem River Houses was praised by historian Gail Radford for the way it was integrated with the surrounding community, and it was noted that the architects designed the buildings in such a way so that they fit in with their surrounding city context and did not feel entirely out of place.²¹

In Harlem River Houses entries into residential areas of the buildings are accessed through the courtyard, with the exception of five entries on the eastern most building that is between Adam C. Powell Boulevard and Harlem River

¹⁹ "Harlem River Houses." Facebook. Accessed October 29, 2016.
<https://www.facebook.com/pages/Harlem-River-Houses/112269258788164>.

²⁰ "Affordable New York: Harlem River Houses." MCNY Blog New York Stories. 2015. Accessed November 09, 2016. <https://blog.mcny.org/2015/11/10/affordable-new-york-harlem-river-houses/>.

²¹ Bloom, Nicholas Dagen. *Public Housing That Worked: New York in the Twentieth Century*. Philadelphia: University of Pennsylvania Press, 2008.

Drive, where there is no corresponding courtyard. The only means of access to apartments is through the use of these stairwells (Fig. 11). There are up to nine stairwell entries serviced by each courtyard, and these stairwells each serve three to four apartments per floor. The primary social spaces in this project are the courtyards, which most residents are able to see from their apartment, and the stairwells appear to be strictly for moving people from the courtyard to their apartment.

When time Harlem River Houses turned fifty years old the New York Times noted that thirty-six of the original tenants were still living in the complex. John Louis Wilson, one of the architects on Archibald Manning Brown's team that designed the project, said that "We tried to create a humane architecture, and there is no stigma of living in this particular housing project."²² The resident's views echo this statement. Mrs. Jackson, a resident at the time, told the New York Times that she had never considered moving out of the development, although she had moved within it a number of times when the size of her family changed. The New York City Housing Authority Director also said that the crime rate in Harlem River Houses was very low because of the "sense of community" within the project.

Today the Harlem River Houses are a historic landmark and in need of repairs, but the sense of community throughout the people still living there does not seem to have changed. The community's facebook page regularly posts

²² Horsley, Carter B. "At Project in Harlem, It's a Time of Pride." *The New York Time*, July 13, 1975. Accessed November 9, 2016. <http://www.nytimes.com/1975/07/13/archives/at-project-in-harlem-its-a-time-of-pride-at-a-housing-project-in.html>.

about topics ranging from Family Fun day in August to the importance of voting in elections. While the circulation in this development does not actively appear to be contributing to the sense of community among the residents something has brought and kept these people together over the years.



Figure 10 Harlem River Houses "The Pit"

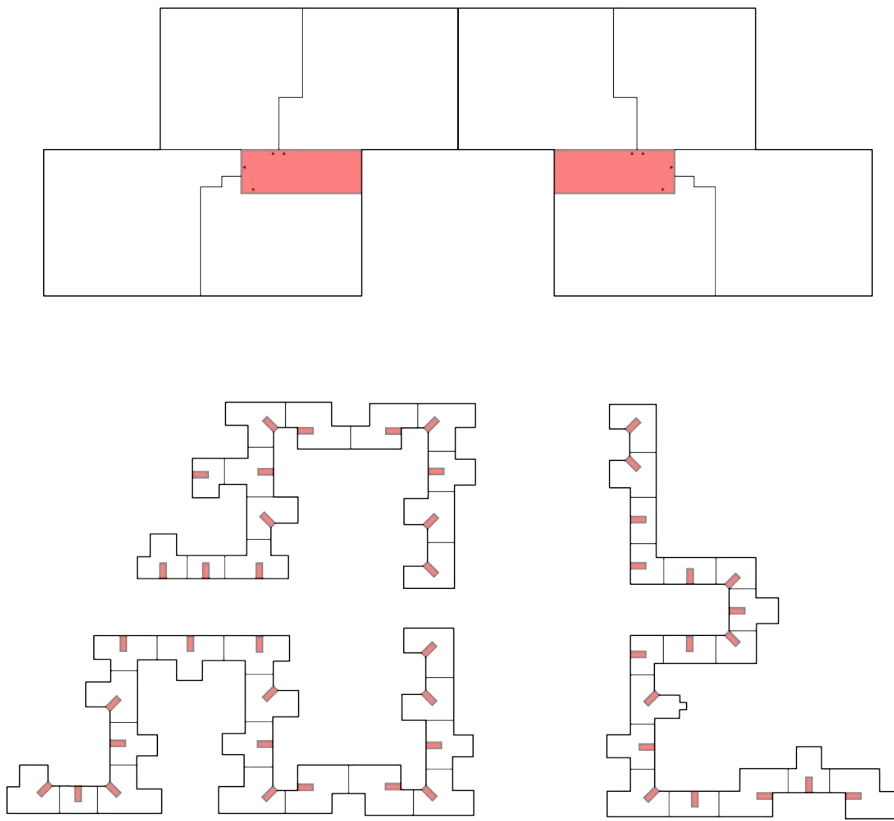


Figure 11 Harlem River Houses building plans, with highlighted vertical circulation

Piraeus

Architect: Hans Kolhoff
 Location: Amsterdam, Netherlands
 Date Constructed: 1994
 Number of Units: 304

Piraeus (Fig. 12) was constructed as part of a redevelopment plan for the KNSM Island in Amsterdam. The original massing plan for the area by Jo Coenen consisted of two large rectangular volumes that were each bisected by large cylindrical volumes that were intended to be public space (Fig. 13). On the western side of the block, in the same location as the building mass that would become Piraeus, there remained an old harbor building that squatters successfully petitioned to preserve. This harbor building then became included in Coenen's master plan, which interrupted the cylindrical space of the western building.²³ This resulted in the folding of the form around the harbor building, and removal of the cylindrical public space, which was replaced by two smaller courtyards (Fig. 14).

Piraeus combines circulation strategies for its residents. Larger three and four bedroom apartments are accessed via stairwell. Smaller, more narrow apartments and maisonettes are placed in rows and accessed by a hallway, since this approach is more efficient for servicing a large number of small apartments (Fig. 15). Hans Kollhoff's goal in the design for Piraeus was to provide access to as many housing units as possible with the least amount of access space. Circulation spaces in this project are meant to be as efficient as

²³ Leupen, Bernard, Harald Mooij, and Rudy Uytenhaak. *Housing Design: A Manual*. Rotterdam: NAI Publishers, 2011.

possible, leaving as little space in excess as possible. Concerns for community spaces and interaction between residents are left up to the programming and design of the ground floor of the project.

Common areas for the community and people living in Piraeus take place on the ground floor of the building. On the west end of the block there is a park designed by landscape architect Mien Ruys. A large “portal” was created on the ground floor of the west wall of Piraeus, so that this park would flow into the western courtyard.²⁴ The building itself contains cafes, retail units, and artwork to engage with the surrounding community. On the west elevation of Piraeus there is artwork painted on the building facade that causes the park and the building to interact with each other even further.²⁵

Pamela Buxton credits a number of characteristics with the overall success of Piraeus. One aspect is the fifty-six different apartment typologies located within the single building. The varying number of typologies attracts many different types of people with different needs and demands for an apartment. She goes on to say that “the building seems to house all the differences you find in the street, and this variety makes it part of the street, and part of the city.”²⁶ This integration is aided by the fact that Piraeus is built to the boundary of the site and

²⁴ Leupen, Bernard, Harald Mooij, and Rudy Uytenhaak. *Housing Design: A Manual*. Rotterdam: NAI Publishers, 2011.

²⁵ Buxton, Pamela. "ARCHITECTS' INSPIRATIONS Gerard Maccreanor Revisits the Piraeus Building in Amsterdam." Bdonline.co.uk. October 02, 2009. Accessed November 09, 2016. <http://www.bdonline.co.uk/gerard-maccreanor-revisits-the-piraeus-building-in-amsterdam/3149918.article>.

²⁶ Buxton, Pamela. "ARCHITECTS' INSPIRATIONS Gerard Maccreanor Revisits the Piraeus Building in Amsterdam." Bdonline.co.uk. October 02, 2009. Accessed November 09, 2016. <http://www.bdonline.co.uk/gerard-maccreanor-revisits-the-piraeus-building-in-amsterdam/3149918.article>.

there are no street or side setbacks, which force the building to interact with its surrounding context. The interactions the building has with the street, park, and the inclusion of art and retail show that everything about the building proclaims that public space is the most important idea behind the project.



Figure 12 Piraeus Aerial View

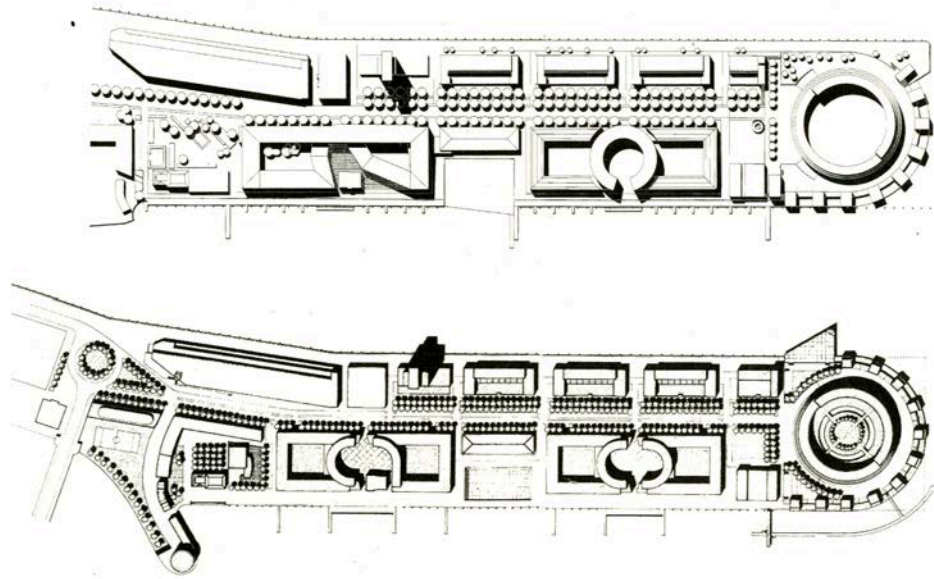


Figure 13 Piraeus site design before (bottom) and after (top) plans to preserve existing harbor building.



Figure 14 Piraeus Courtyard

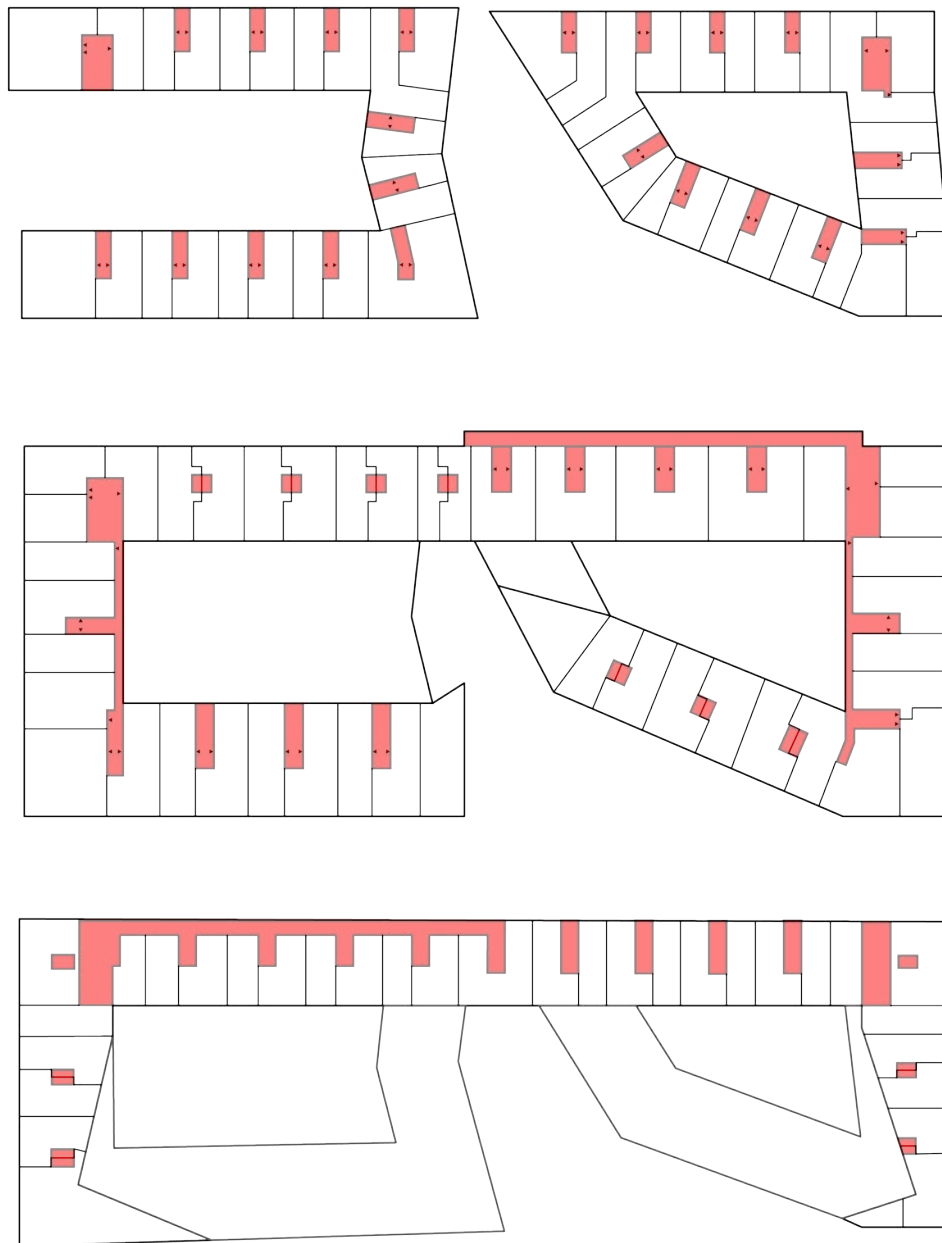


Figure 15 Piraeus Floor Plans with highlighted circulation. Top: Third Floor. Middle: Fifth Floor. Bottom: Seventh Floor

Knickerbocker Village

Architect: Fred C. French
Location: New York City
Date Constructed: 1933
Number of Units: 1,600

Knickerbocker Village (Fig. 16), located between Chinatown and the Lower East side in Manhattan, was designed as a replacement for the existing tenement houses that had been known as the lung block for its high rate of tuberculosis. The twelve story buildings originally caused concern for some, who thought the buildings would simply be a replacement to the slums that had just been torn down.

Knickerbocker Village uses stairs, elevators, and hallways to provide access to apartments. Groups of eleven apartments are given three stairs, two elevators, and one public hall to access units, and this pattern is repeated throughout the two buildings (Fig. 17). While this strategy does not provide an opportunity for all residents to interact with each other throughout the entire building, there is greater potential for interaction and bonding between eleven units than between four units served by a stairwell only circulation scheme.

Knickerbocker Village only offers two main points of entry for residents in each building. Entries are located on the center of the north and south faces of each building (Fig. 18). After this initial entry, which is gated and requires a key card to enter, residents must use the paths in the courtyard to navigate their way to their respective apartment entries. While it is plausible that residents who share a courtyard space will interact with each other, it is unlikely that residents

living in the separate buildings of Knickerbocker Village would ever encounter one another.

There is a lack of commentary to be found online about living in Knickerbocker Village. The community appears to have no group facebook page, and although they have a website it has not been updated since 2014. The commentary that is found speaks more to neighborhood surrounding Knickerbocker Village. People comment that the area lacks a distinct neighborhood feel, or that they do not like being in such close proximity to public housing projects such as the Rutgers and Smith Houses.²⁷



Figure 16 Knickerbocker Village Aerial View

²⁷ "Knickerbocker Village." Accessed November 9, 2016. https://www.yelp.com/biz/knickerbocker-village-new-york?utm_campaign=yelp_feed&utm_medium=feed_v2&utm_source=mapquest.

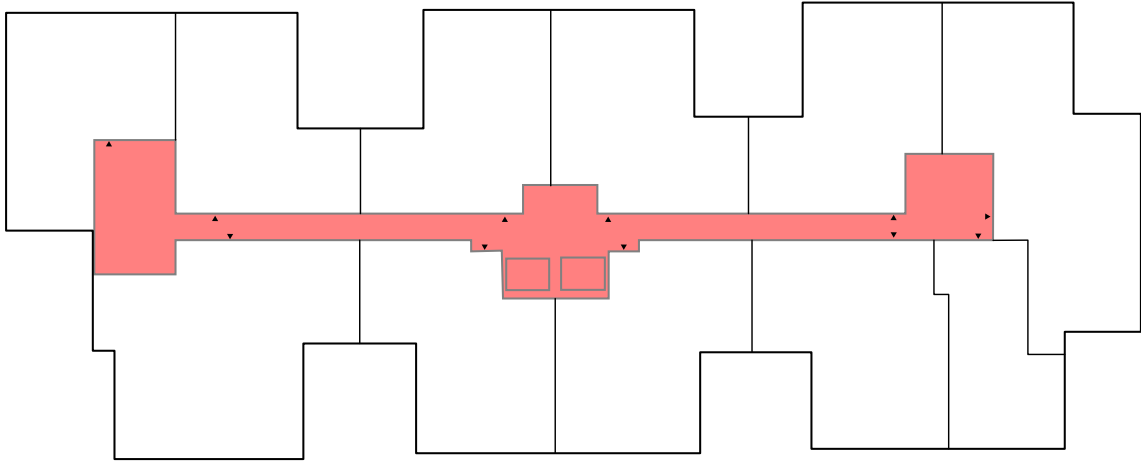


Figure 17 Portion of Knickerbocker Village plan with highlighted circulation

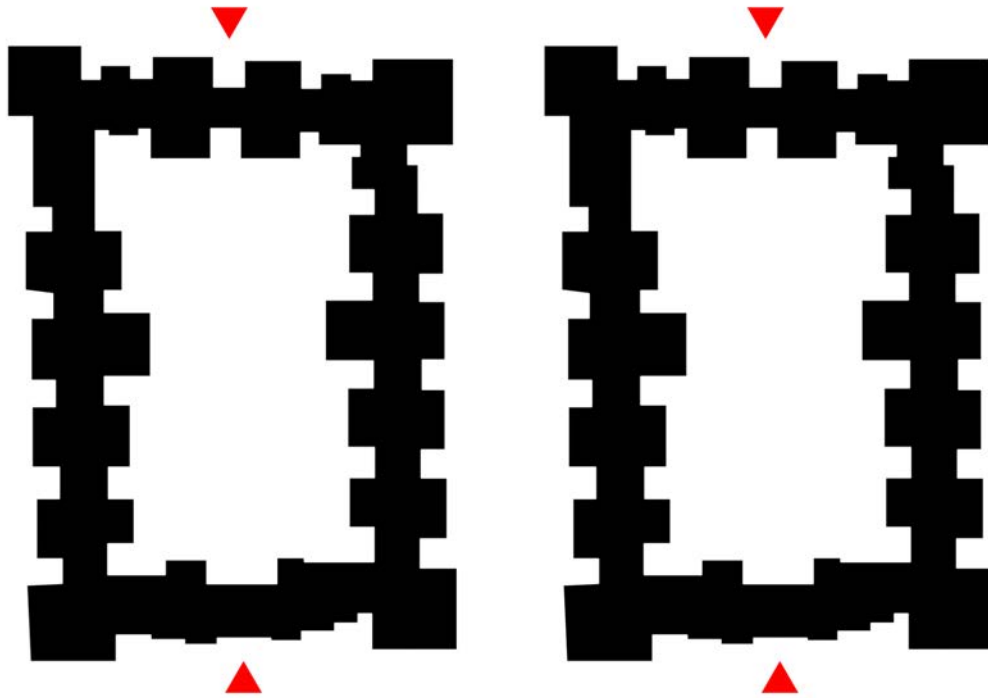


Figure 18 Knickerbocker Village building masses with entrances from city streets marked

Via 57 West

Architect: BIG Architects

Location: New York City

Date Constructed: 2016

Number of Units: 142 (low-income) 709 (overall)

Via 57 West (Fig. 19), located in the Hell's Kitchen area of Manhattan, contains one hundred forty two affordable housing units. The apartment units on every floor are accessed by a continuous public hallway. This hallway creates double loaded corridors on the north and east wings of the upper floor, and a single loaded corridor on the southern wing of the building (Fig. 20). This one hallway grants access to fifty-one apartments on the upper floor plan shown, giving it a large potential to generate social interactions between residents.

Social features of Via 57 West, in addition to the ground floor courtyard space include resident lounges, a reading room, game rooms, a movie screening room, and a golf simulator with a putting green. These features are offered to residents to “enhance your urban lifestyle and nourish your mind, body, and soul.”²⁸ Since the building has only recently been completed, it's hard to say to what extent these spaces are actually used and appreciated, but the few reviews available compliment the amenities and compare the courtyard to “your own

²⁸ Via. Accessed November 9, 2016. <http://www.via57west.com/#amenities-features>.

heaven.”²⁹



Figure 19 Via 57 West

²⁹ Y., Peg, and Iris K. "VIA 57 West - Hell's Kitchen - New York, NY." Yelp. 2016. Accessed November 10, 2016. <https://www.yelp.com/biz/via-57-west-new-york>.

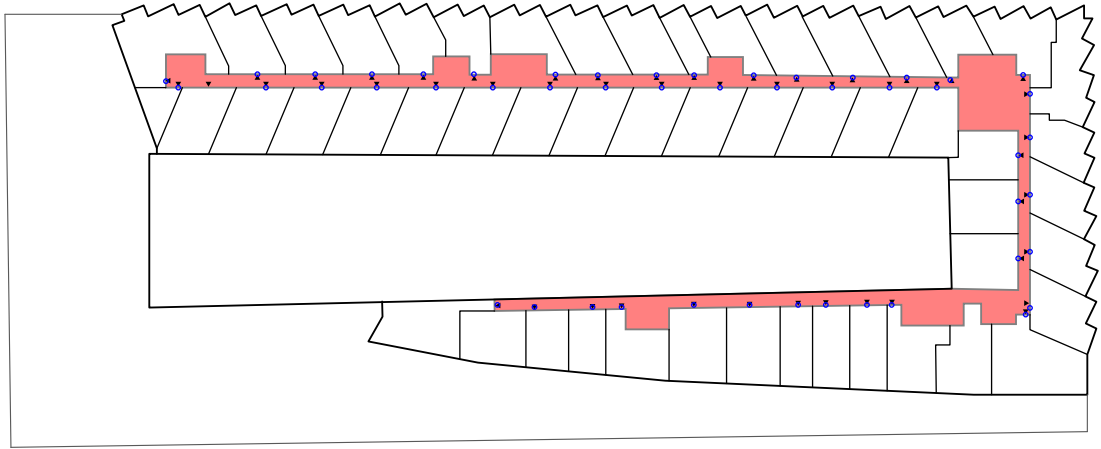


Figure 20 Upper floor of Via 57 West, with circulation highlighted

Tower Type

Baruch Houses

Architect: Emery, Roth and Sons

Location: New York City

Date Constructed: 1959

Number of Units: 2,194

Baruch Houses (Fig. 21) is a tower complex on twenty-seven and a half acres of land in the Lower East Side of Manhattan. It is made up of seventeen nearly identical sixteen and seventeen story buildings. The buildings take up only twelve percent of the site, leaving ample space for landscaping, walking paths, sitting areas, and playgrounds. Buildings on the site appear to lack a systematic organization system, and buildings seem to be placed on the site haphazardly. Many of the buildings are located on the west portion of the site between Columbia Street and Baruch Drive, leaving some buildings slightly more isolated on the east side of the site near Franklin D. Roosevelt Drive. These buildings surround spaces such as basketball courts and soccer fields, which are the primary outdoor social spaces of the development (Fig. 22).

The buildings making up Baruch Houses use a faceted façade to create abundant access to light, air, and views to the East River. Each tower is serviced by two sets of vertical core circulation that are connected by an interior hallway on every floor (Fig. 23). Each building has two points of access where the vertical circulation is located, with entries typically oriented towards the street side of the building.

Crime has been a notorious problem in Baruch Houses, peaking in the 1980s. Up until this point residents would spend their summers sleeping on the roof and the fire escapes in order to escape their stuffy non air-conditioned units. Residents would carry couches and mattresses up onto the roof to take advantage of the breeze. As the frequency of crime in the development increased people stopped doing this, since sleeping outside would lead to being robbed.³⁰

While crime rates in New York City have gone down in recent years, there is still a number of crimes happening within the Baruch Houses. In April of 2013 thirty-three members of the “Bloc Boyz” were arrested for dealing drugs within the project. In November of 2015 a woman was nearly raped by a man who had gotten into the building because of a broken lock on the entry door. The man is said to have been hiding in the stairwell and attacked the woman as she tried to gain access to her apartment.³¹ In 2016 Juan Joao was robbed while he was standing in the hallway right outside of his apartment. It was the third time in a seven-month period that Joao had been robbed just outside of his home.³² Roberto Naploean, the President of the Tenants’ Association at Baruch Houses, says there is a wonderful community atmosphere despite the developments problems.

³⁰ Surana, Kavitha. "Beneath Baruch Houses, a 'Rough Block' Wiped Off the Map." Bedford Bowery. December 28, 2014. Accessed November 15, 2016. <http://bedfordandbowery.com/2014/12/beneath-baruch-houses-a-rough-block-wiped-off-the-map/>.

³¹ "Police: Man Attacked Three Women In Three Hours In Lower East Side." CBS New York. November 12, 2015. Accessed November 15, 2016. <http://newyork.cbslocal.com/2015/11/12/les-baruch-houses-sexual-assault/>.

³² "CBS2 Exclusive: Lower East Side Man, 76, Says He Has Been Robbed 3 Times Near Apartment." CBS New York. Accessed November 15, 2016. <http://newyork.cbslocal.com/2016/05/27/lower-east-side-robbery-victim/>.

“There’s a lot of positives here going on, it’s not all crimes and drugs,” he said. “You don’t feel lonely here. If you have any problems you have your neighbor and you can knock on his door. He’ll help you call the police, or give you something to eat, give you something to drink, and maybe take care of your children when you go to the pharmacy or grocery. You have your neighbors and they can do that for you. And that’s working.” –Roberto Napoleon



Figure 21 Baruch Houses Aerial View

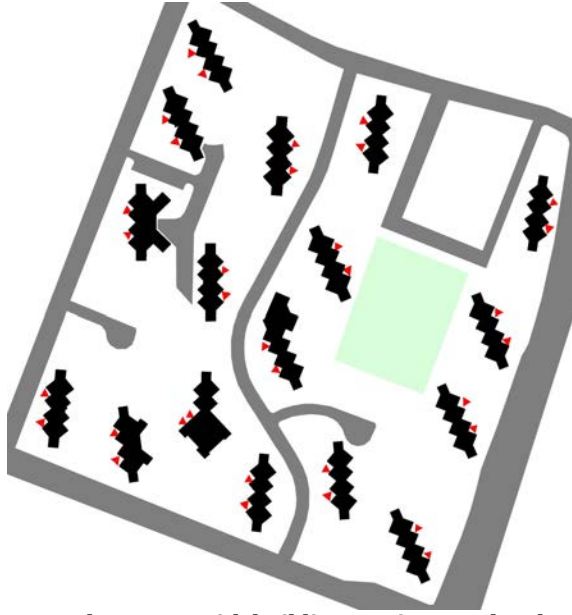


Figure 22 Site plan Baruch Houses, with building entries noted and common space highlighted in green

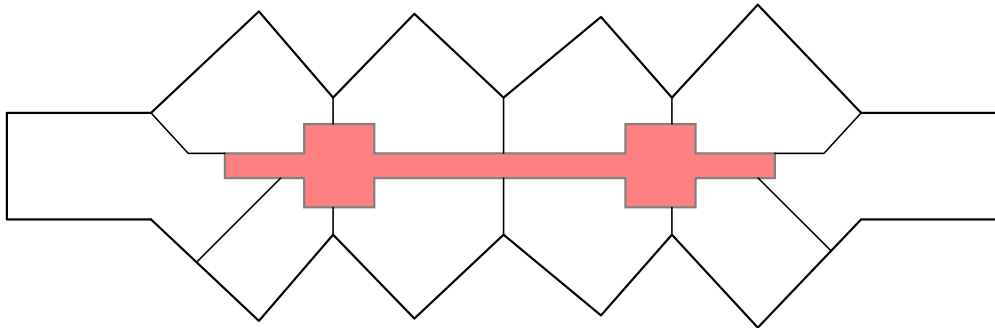


Figure 23 Baruch Houses typical floor plan, with circulation highlighted

Hatert Tower

Architect: 24H Architecture
Location: Nijmegen, Netherlands
Date Constructed: 2011
Number of Units: 72

The city of Nijmegen in the Netherlands has established a master plan to reestablish their housing infrastructure. One of the first projects to be constructed is Hatert Tower (Fig. 24), designed by 24H Architecture. The thirteen-story tower accommodates seventy-two apartment units and houses a community health center on the ground floor. Public space for the tower and the surrounding community is provided by a raised deck that serves as a public plaza while also covering the parking area for Hatert Tower residents.

Hatert Tower situates its circulation, which consists of a stairwell and elevators, in the middle of the building. Unlike other apartment entries serviced by only stairwell, where the entry is often a slightly larger landing, the Hatert Housing project creates entries that are more separated from the circulation (Fig. 25). Every unit is given a small amount of personal space at the perimeter of the core, leaving the area in the middle to serve as a small communal space while one waits on the elevator.



Figure 24 Hatert Tower

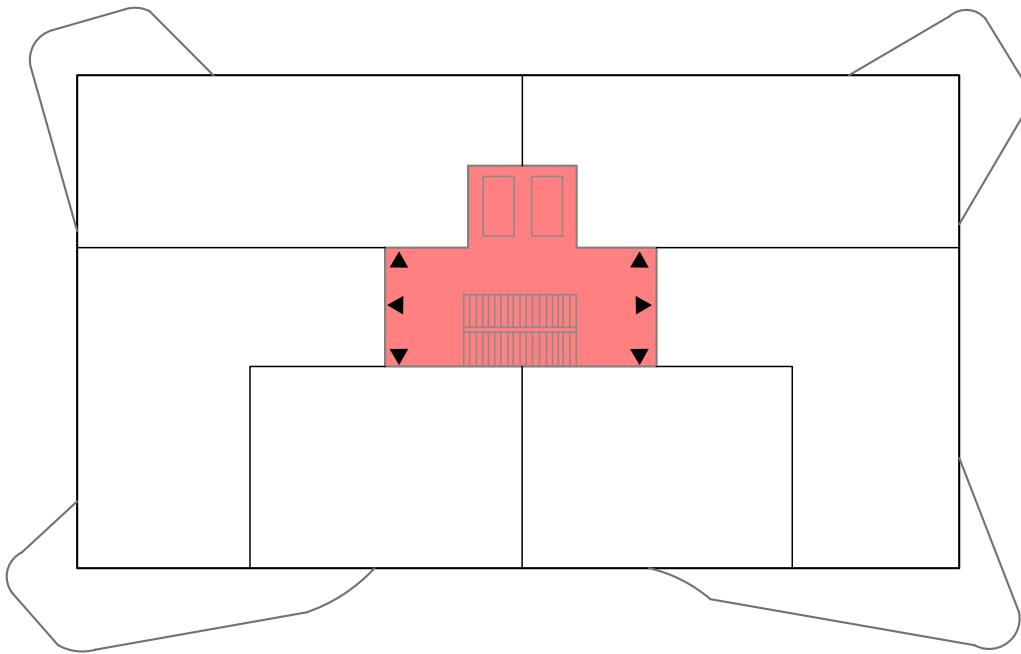


Figure 25 Hatert Tower typical floor plan, with circulation highlighted

Haus 13 IGA Stuttgart

Architect: Erick van Egeraat with Mecanoo

Location: Stuttgart, Germany

Date Constructed: 1993

Number of Units: 16

Erick van Egeraat designed House 13 (Fig. 26) in collaboration with Mecanoo for the 1993 Internationale Gartenschau in Stuttgart. The theme of the show focused on sustainability ranging from single-family homes to apartment buildings, and the group saw this as an opportunity to explore the idea of linkage between residences. Mecanoo's thought was that when parts of homes became detached and rearranged, new uses would emerge.³³

Haus 13 is made up of three separate apartment towers that are all connected by a set of stairs, elevator, and uncovered walkways that lead to each set of apartments (Fig. 27). This scheme only allows for three units to be accessed per floor, with two of the units getting long spans of balcony to themselves. With so few apartments utilizing such a large area for circulation, it seems unlikely that any real sense of community is created. The separation of units into individual towers even rejects the idea communal living, since the detachment of units creates a feeling more synonymous with suburban living in individual houses rather than urban life where residents are often in close proximity to their neighbors.

³³ Leupen, Bernard, Harald Mooij, and Rudy Uytenhaak. *Housing Design: A Manual*. Rotterdam: NAI Publishers, 2011.



Figure 26 Haus 13

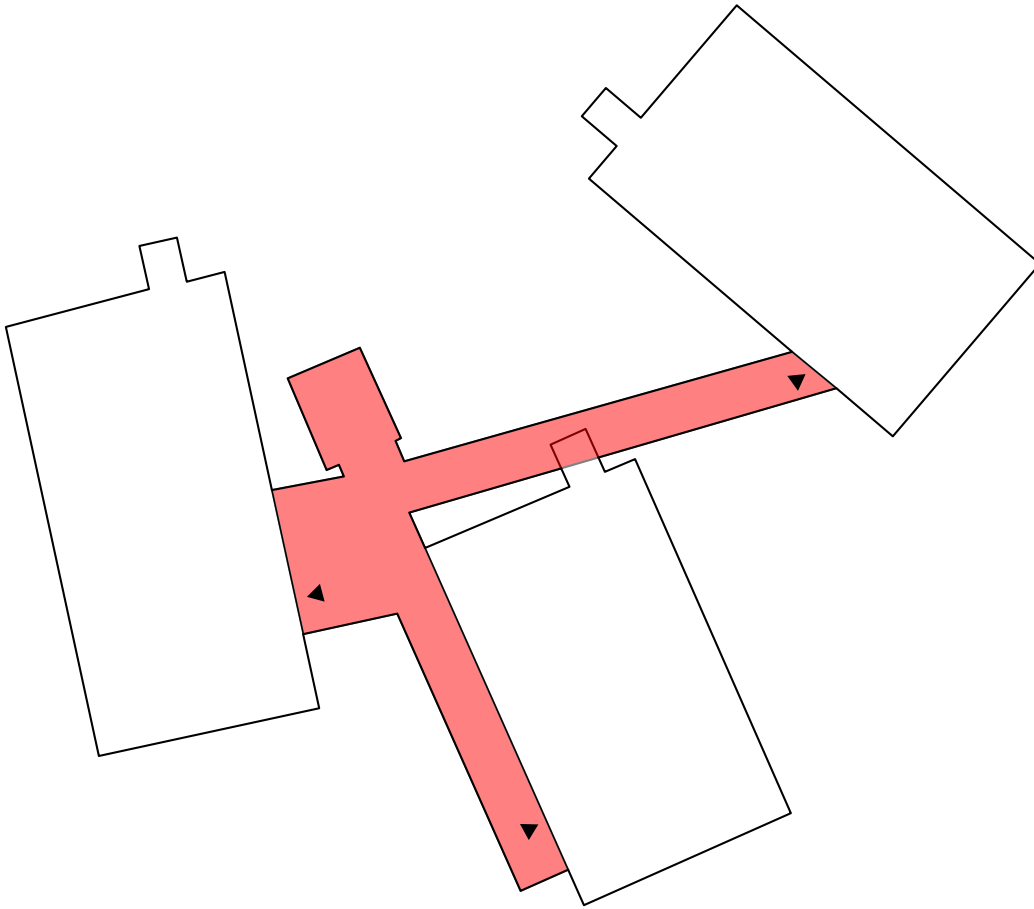


Figure 27 Haus 13 typical floor plan, with circulation highlighted

Keeling Tower

Architect: Deny Lasdun
Location: London, England
Date Constructed: 1958
Number of Units: 64

Keeling Tower (Fig. 28) on Claredale Street in London is a tower that, much like Haus 13, separates living spaces from circulation spaces. One central tower made of stairs and elevators links four separate towers of apartment units. Each tower holds two apartments per floor, and hallways reaching out from the main tower of circulation service these apartments. Communication between residents in this project would primarily happen in the central tower, since this is where people are most likely to encounter one another.

Deny Lasdun's consultations with the first residents of Keeling Tower greatly influenced the overall design of the project. From meetings with people who would inhabit Keeling Tower after it was completed, the architect gathered that these people were accustomed to living in houses that also had back yards. The residents were said to be proud people, who kept animals in their backyards and were accustomed to a greater sense of privacy in their homes. As a result Lasdun decided that apartments would be arranged in groups of two units per floor, and that these apartments would be separated from the main space for circulation. The primary intentions of separating the circulation space of this project from the residential areas were to remove the noise of public spaces from

private dwellings in order to give each apartment a greater sense of privacy.³⁴

This created a five-tower approach to the building- four for residential use and one common tower for all the project's vertical circulation (Fig. 29). This approach also allowed more light and air into the building while creating a greater amount of privacy for residential units.

In addition to serving as circulation space the non-residential tower is meant to serve as a place where multiple things happen, not just movement from the elevator to ones apartment. Lasdun designed the space thinking that it would also serve as an area where people could hang their clothes to dry, and that people would meet and chat there. In reality, the area was good for drying clothes since wind tended to swirl around the centralized tower, but it did not constitute an area where people tended to gather and chat. Access to the elevator was not limited at the ground floor level, and as a result the common spaces above eventually became a place where graffiti and vandalism took place.

Despite some of the apparent shortcomings of the common areas, people enjoy living in Keeling Tower. When it began suffering from structural problems the tenants still enjoyed living there. Lasdun was told by one resident that “we loved living in our crumbling tower block,”³⁵ and a member of the Residents Association said that if the tower were brought to a livable state everyone would

³⁴ "Keeling House, Bethnal Green: 'We Loved Living in Our Crumbling Tower Block'." *Municipal Dreams* (blog), February 25, 2014. Accessed November 09, 2016. <https://municipaldreams.wordpress.com/2014/02/25/keeling-house-bethnal-green/>.

³⁵ "Keeling House, Bethnal Green: 'We Loved Living in Our Crumbling Tower Block'." *Municipal Dreams* (blog), February 25, 2014. Accessed November 09, 2016. <https://municipaldreams.wordpress.com/2014/02/25/keeling-house-bethnal-green/>.

move back in. Despite the fact that seventy five percent of the residents could get to their apartment door without passing the entrance to another dwelling, people enjoyed living in the tower block.



Figure 28 Keeling Tower

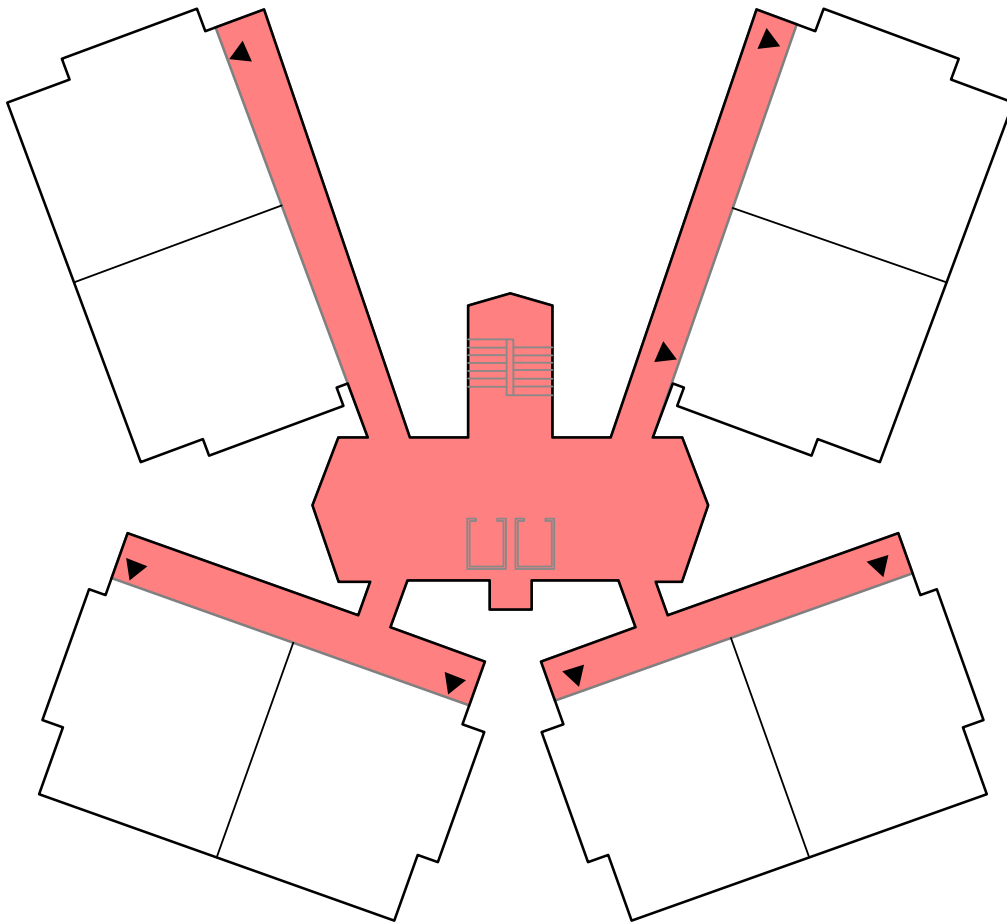


Figure 29 Keeling House, with central circulation tower and extending hallways highlighted

Twin Parks Northwest

Architect: Prentice and Chan, Ohlhausen
 Location: New York City
 Date Constructed: 1970
 Number of Units: 113

When New York City decided to build the Twin Parks series of public housing buildings, they chose to give the commissions to “high style designers who have generally been kept away from such work.”³⁶ The goal was to attempt to discover to what extent the architecture plays in the success or failure of a housing project. Four architects were chosen and given four different portions of the Twin Parks site, located in the Bronx. The objective was for the architect’s to design buildings that fit in with respect to the surrounding context. Rather than being classified as infill projects they are characterized as “scatter site housing.”³⁷ The group responsible for designing Twin Parks Northwest (Fig. 30) is Prentice and Chan, Ohlhausen. While their building is considered one of the most successful of the four architects that participated in the overall design for the complex, it still receives mixed reactions in terms of the outcome of its social spaces.

The ground floor of Twin Parks Northwest’s primary objectives are to create public spaces and connect to the surrounding city. The building is lifted on

³⁶ Goldberger, Paul. "Twin Parks, an Effort to Alter the Pattern of Public Housing." *The New York Times*, December 27, 1973. Accessed November 15, 2016.
<http://www.nytimes.com/1973/12/27/archives/twin-parks-an-effort-to-alter-the-pattern-of-public-housing.html>.

³⁷ Goldberger, Paul. "Twin Parks, an Effort to Alter the Pattern of Public Housing." *The New York Times*, December 27, 1973. Accessed November 15, 2016.
<http://www.nytimes.com/1973/12/27/archives/twin-parks-an-effort-to-alter-the-pattern-of-public-housing.html>.

pilotis³⁸, creating a public walkway that leads through the ground floor connecting Crane Square to Webster Avenue (Fig. 31). The ground floor of the building contains an entrance lobby, a laundry space, walled in gardens, a children's play area, and a public seating area.³⁹ The most persistent problem in the area is crime, and none of the Twin Parks buildings originally addressed the issues of security or limiting access to these buildings in their original designs. In the years since the construction of Twin Parks Northwest there have been attempts to improve security, the most recent one being a one hundred sixty three million dollar approval for funding to preserve the Twin Parks buildings in 2013, which included the installation of security cameras in addition to the renovation of the current structures.⁴⁰

The residential floors of Twin Parks Northwest focus on employing tactics that improve the efficiency of circulation space, limiting hallway space as much as possible and providing more space for apartment units. Apartments are accessed via an internally located stair, elevators, and hallway (Fig. 32). On floors three, six, nine, twelve, fifteen, and eighteen the hallway is long and provides access to eleven apartment units. On floors four, seven, ten, thirteen, sixteen, and nineteen a much shorter hallway is present, serving seven apartments. Stairs located inside the individual apartment units provide access to

³⁸ Columns of iron, steel, or reinforced concrete supporting a building above an open ground level.

³⁹ "Housing Prototypes: Twin Parks Northwest, Site 4." Housing Prototypes: Twin Parks Northwest, Site 4. Accessed November 15, 2016. http://www.housingprototypes.org/project?File_No=USA005.

⁴⁰ "Governor Cuomo Announces Approval of \$163 Million of Funding to Restore and Preserve Mitchell-Lama Housing in the Bronx." Governor Andrew M. Cuomo. 2014. Accessed November 15, 2016. <https://www.governor.ny.gov/news/governor-cuomo-announces-approval-163-million-funding-restore-and-preserve-mitchell-lama>.

all other floors. By limiting the number of floors with access to the main circulation, a greater amount of efficiency is achieved through the use of horizontal circulation space, and more people are forced to use the same space to access their apartment. This promotes a greater chance for residents interacting with one another. This is the same idea Alison and Peter Smithson had in mind when they created their “streets in the air” for Golden Lane Housing and Robin Hood Gardens. Since more people use a common area to access their apartment unit, they have a greater chance of interacting with one another.



Figure 30 Prentice and Chan, Ohlhausen Twin Parks Northwest Building



Figure 31 Twin Parks Northwest ground floor walk through space

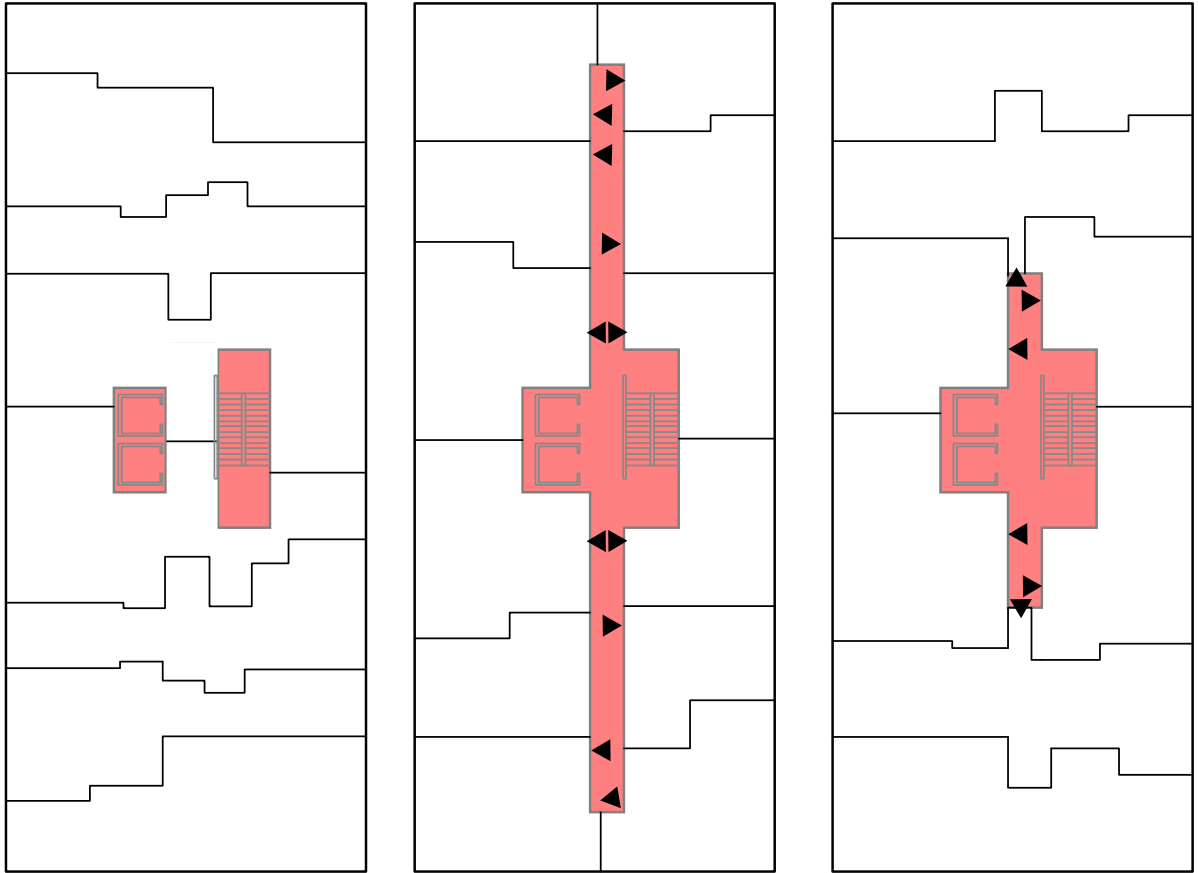


Figure 32 Twin Parks Northwest typical floor plans with circulation highlighted

Slab Type

Robin Hood Gardens

Architect: Alison and Peter Smithson

Location: London, England

Date Constructed: 1972

Number of Units: 213

Robin Hood Gardens (Fig. 33), located in East London, exemplifies the ideas of Alison and Peter Smithson theories on housing. It was built in 1972, during the era when most of post war Britain was building residential towers out of concrete in order to symbolize progress made after the war. The Smithsons did not find the tower to be an adequate solution to housing, and so their design for Robin Hood Gardens uses the slab type design. The development contains two hundred thirteen apartments in two buildings, one that is seven stories tall and one that is ten stories tall in order to allow maximum sunlight into the sight.

Robin Hood Gardens is made up of two linear buildings that surround a central common green space (Fig. 34). The site is designed so that minimal noise from cars on the street makes it into the complex and the common green area. Where buildings are not able to block the noise of traffic an acoustic wall, in addition to a line of trees, is placed in order to prevent noise from reaching the communal green space. This green space is meant to be a stress free place for residents.⁴¹

⁴¹ "The Smithsons on Housing." YouTube. February 05, 2013. Accessed November 15, 2016. <http://www.youtube.com/watch?v=UH5thwHTYNk>.

The layout of circulation within Robin Hood Gardens is intended to relate directly to the sense of community within the project. Apartments are accessed via “streets in the sky” that occur at every third floor level (Fig. 35). Entries to all apartments are off of this main street, which is intended to act as a neighborhood where children play and adults interact. The streets are placed on the courtyard sides of the buildings in order to provide an additional connection to the common area between the two buildings.

The layout of the apartment also relates itself to the level of noise and corresponding common area around the buildings. Noisier spaces, like the living room, are placed on the outer edges of both buildings towards the streets. Quieter spaces, like bedrooms and the kitchen, are placed on the green space side of each building. This placement also gives mothers the ability to see their children playing on the deck or in the green spaces in between buildings.

The degree of success or failure of Robin Hood Gardens remains highly debated. Dickon Robinson notes that the street decks provide adequate space for people to interact with each other and sit outside without obstructing other residents from passing by, which causes the decks to create “a sense of generosity which is entirely absent from the many inter-war and immediately post-war LCC balcony access estates.”⁴² At the ground level of the buildings there are small planters that are used by residents to grow vegetables. Dickon interprets the presence of these vegetable gardens to mean that there is a high level of respect for other people’s property and that there must be a large amount

⁴² “Robin Hood Gardens — The Twentieth Century Society.” Robin Hood Gardens — The Twentieth Century Society. September 2008. Accessed November 15, 2016. <http://www.c20society.org.uk/casework/robin-hood-gardens/>.

of social cohesion among residents. In contrast to Dickon's interpretations of success for Robin Hood Gardens, seventy five percent of its residents support its demolition.⁴³



Figure 33 Robin Hood Gardens interior common space along with one building

⁴³ Morel, Frank. *Abstraction of a Concept: A Reflection on the Robin Hood Gardens*. Academia. June 12, 2012. Accessed November 15, 2016.
file:///Users/jessicawood/Downloads/Abstraction_of_a_concept_a_reflection_on.pdf.

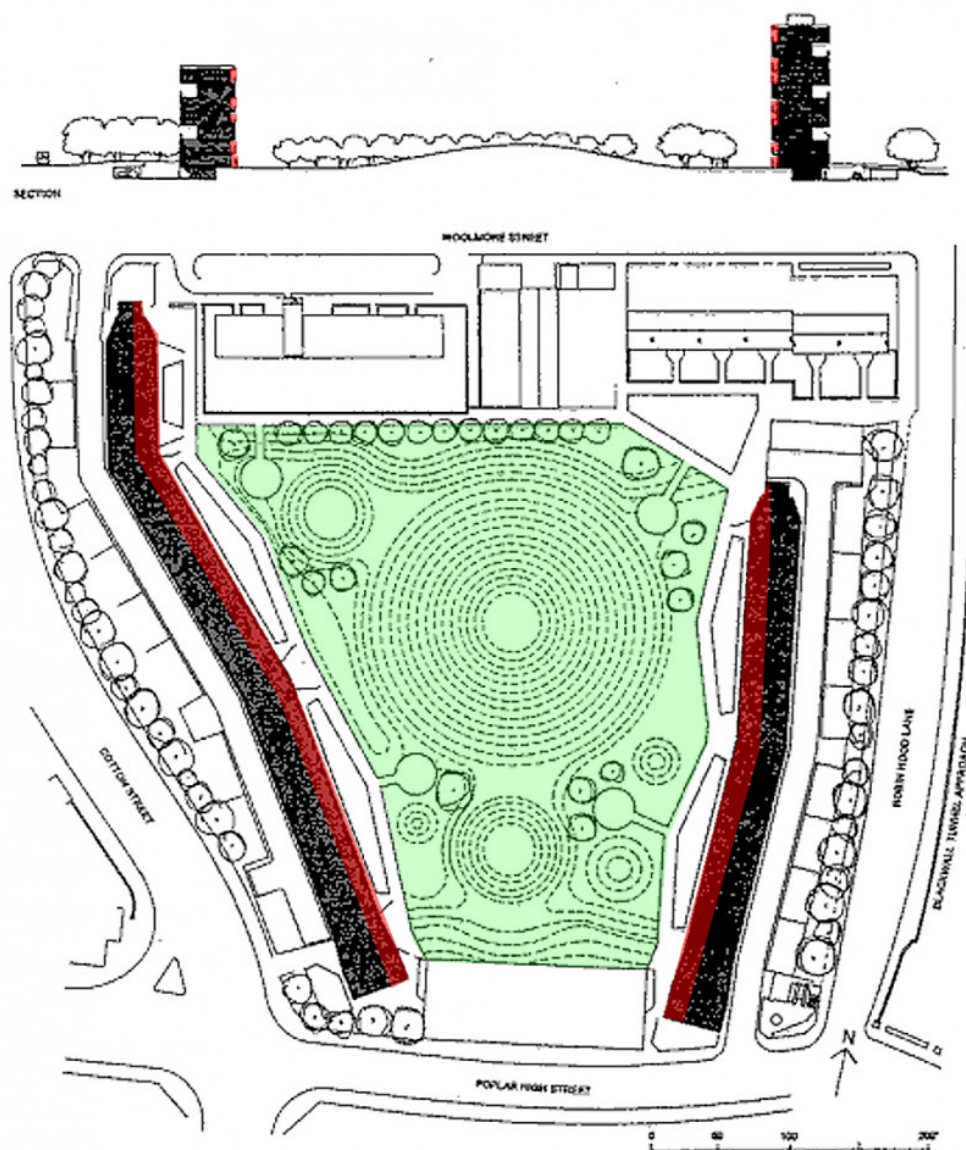


Figure 34 Robin Hood Gardens site plan with central green space (green) and "streets in the air" (red) highlighted

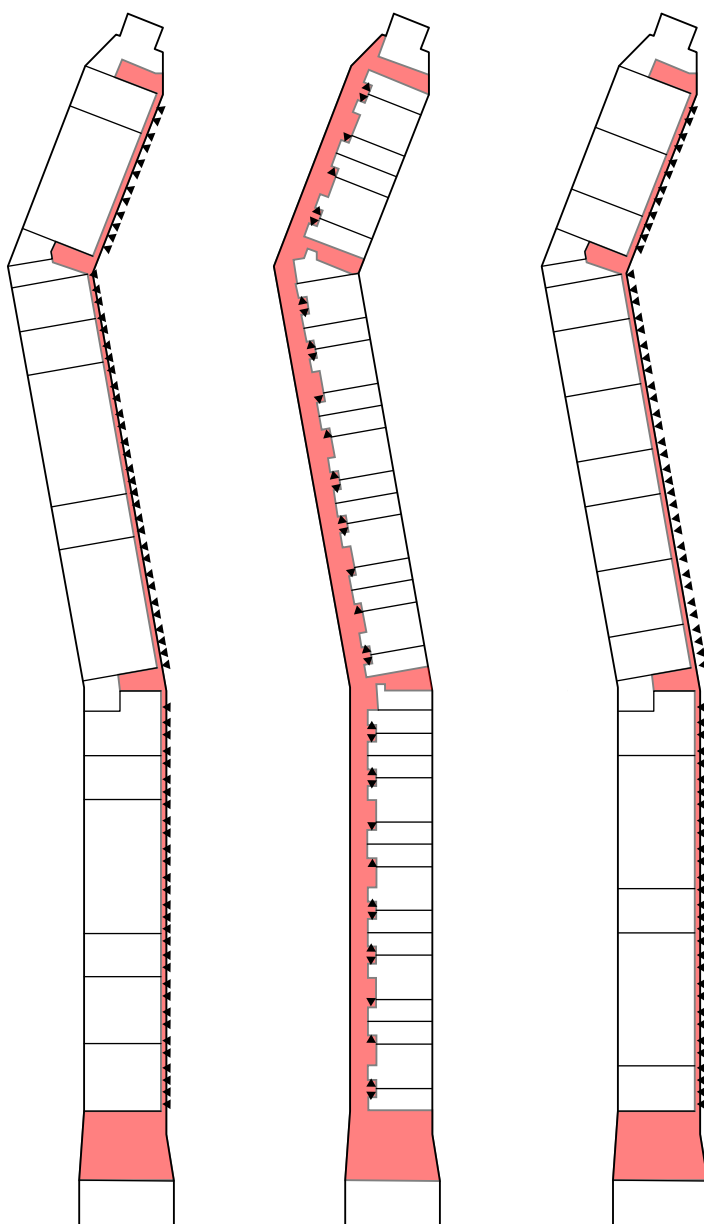


Figure 35 Robin Hood Gardens typical floor plans with circulation highlighted

Interbau Apartment House

Architect: Oscar Niemeyer
Location: Berlin, Germany
Date Constructed: 1957
Number of Units: 78

The Interbau Apartment House (Fig. 36) was designed by Oscar Niemeyer and Soares Filho for the International Building Expedition of 1957. The building rests on V-shaped pillars, leaving most of the ground floor open (Fig. 38). The only closed in areas on the ground floor are the stairs that lead to the apartments on the higher floors. On the sixth floor of the building there is a common area that was intended to create a sense of community by providing space for social events.⁴⁴

Circulation for the project includes six internal stairs located in the main portion of the building and one elevator tower separated from the main structure (Fig. 37). Most residents in the seventy-eight unit building use the stairs in order to access their apartment unit because the elevator tower only provides access to the sixth floor that contains the communal area, and the top floor of the building. When told that Niemeyer also built Brazil's capital one resident responded "But he can't even build a proper elevator; how can he build a city?"

⁴⁴ "Interbau Apartment House by Oscar Niemeyer and Soares Filho." Interbau Apartment House by Oscar Niemeyer and Soares Filho. 2006. Accessed November 15, 2016. <http://www.galinsky.com/buildings/niemeyerinterbau/>.



Figure 36 Interbau Apartment House

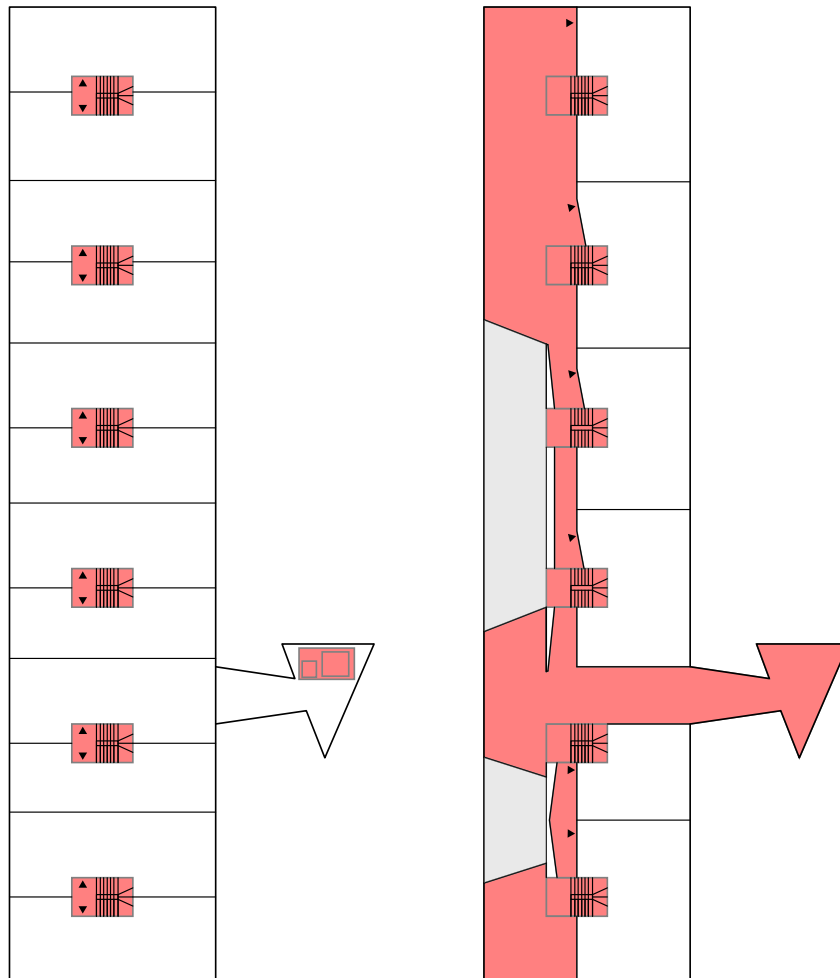


Figure 37 Interbau housing typical floor plan (left) and sixth floor with common area (right) with highlighted circulation



Figure 38 Interbau House open ground floor looking to elevator tower

Brandhofchen

Architect: Rudiger Kramm and Matthias Karch

Location: Frankfurt, Germany

Date Constructed: 1995

Number of Units: 100

Brandhofchen (Fig. 39) is a development consisting of five slab type buildings oriented in the north-south direction (Fig. 41). The buildings occupy sixty-six percent of the site, leaving the rest of the area open for winter gardens and walking paths to connect the buildings. The residential portion of each building is raised, allowing the ground floor to be used for services such as a kindergarten, doctor's offices, shops, community spaces managed by tenants, and parking.⁴⁵

Apartments are accessed by stairs encased in independent structures on the north side of the building (Fig. 40). Each building has two or three sets of stairs depending on its overall length, and each stair provides access to approximately eight apartments in total. The buildings with only two sets of stairs also utilize a small hallway space to allow access to apartments on the western side of the building rather than building another staircase to allow access to one apartment per floor.

Resident reviews of Brandhofchen are not available, but a real estate evaluation indicates that the overall quality of the residential area is medium (on a scale ranging from simple, medium, good, to great location). The development has multiple amenities in its immediate vicinity including two shops, three medical

⁴⁵ Schneider, Friederike. *Grundrißatlas: Wohnungsbau = Floor Plan Manual: Housing*. Basel: Birkhäuser, 2004.

care facilities, three educational institutes, and four stops for various public transportation systems. The crime rate for the neighborhood is also indicated to be at a medium level.



Figure 39 Brandhofchen

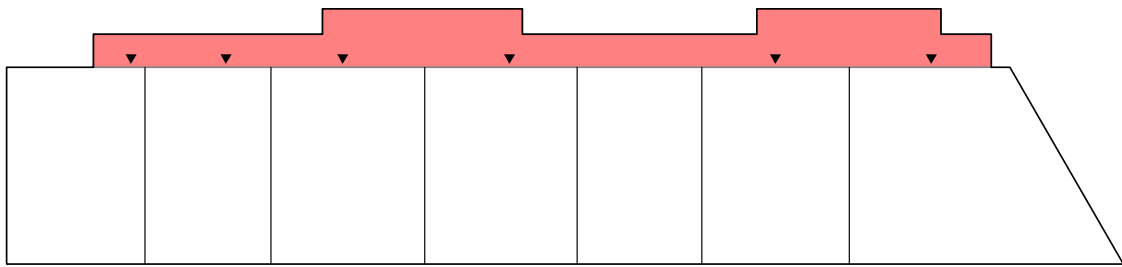


Figure 40 Brandhofchen typical floor plan with highlighted circulation



Figure 41 Brandhofchen site plan with highlighted gardens (green) and stairwells (red)

Klopstockstrasse

Architect: Alvar Aalto, Munkkiniemi, and Paul Baumgarten

Location: Berlin, Germany

Date Constructed: 1957

Number of Units: 84

Alvar Aalto's Klopstockstrasse building (Fig. 42) was completed in 1957 and is located in the Hansaviertel district of Berlin. Like Oscar Niemeyer's Interbau Apartment House the Klopstockstrasse was designed for the International Building Exhibition in Berlin. The residential building is eight stories tall and consists of eighty-four apartment units. Aside from access to the vertical core of stairs and elevators, the ground floor is an open space containing benches for people to sit and gather (Fig. 44). There is also an area on the roof that is available for the residents to use that includes a sauna and sundeck. The basement also provides space for services such as laundry while also including a "hobby room."⁴⁶

Circulation for the Klopstockstrasse building is straight forward, although the circulation appears to resemble the type typically found in tower projects. Where slab projects frequently connect their vertical circulation with a horizontal circulation space, Klopstockstrasse keeps its vertical circulation separated (Fig. 43). The two sets of stairs and elevators provide access to eighty-four apartment units, with each set of vertical core providing access to five units per floor.

⁴⁶ Schneider, Friederike. *Grundrißatlas: Wohnungsbau = Floor Plan Manual: Housing*. Basel: Birkhäuser, 2004.



Figure 42 Klopstockstrasse

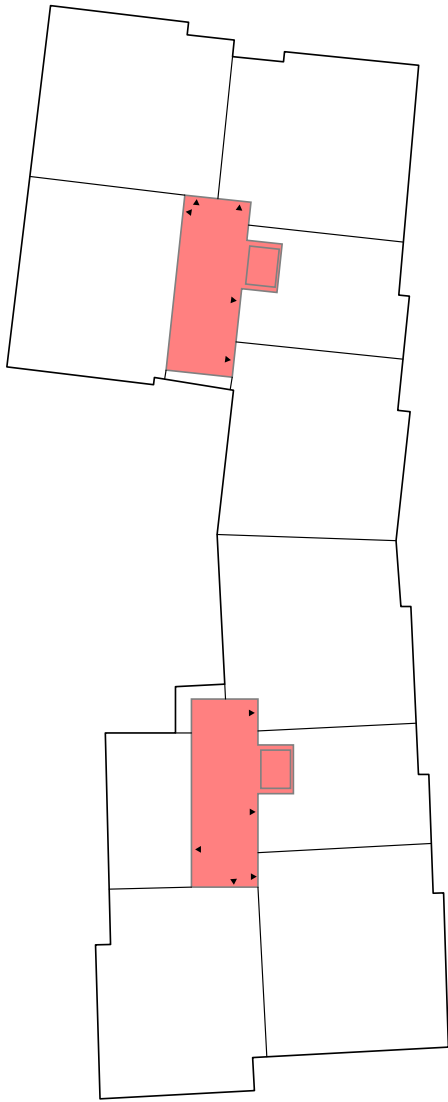


Figure 43 Klopstockstrasse typical floor plan with highlighted circulation



Figure 44 Klopstockstrasse ground floor common area

Ammersooiseplein

Architect: Dolf Dobbelaar, Herman de Kovel, and Paul de Vroom

Location: Rotterdam, Netherlands

Date Constructed: 1988

Number of Units: 43

In Rotterdam the Ammersooiseplein apartment building (Fig. 45) represents a shift from the typical housing typology. Most residential buildings in the area utilize a courtyard type scheme to create buildings that define city blocks. Ammersooiseplein diverges from this building type and employs a freestanding slab type building to terminate a city block.⁴⁷ The building faces a public square, with living areas of the lowest two levels of apartment units looking out onto this space. The apartments located higher in the complex look out to the rest of the city, with their circulation and access spaces facing the square (Fig. 46).

Ammersooiseplein separates its circulation spaces in order to provide ideal views for residents. On the lower floors, where the view of the public square is more desirable than the back of another building, an independent stairwell and open deck space is located on the opposite side of the building facing the city. Where views of Rotterdam become more important than views of the square, a separate tower with stairs and an elevator is placed on the same side of the building as the square, so that living areas look directly out to the city and are not obstructed by circulation space (Fig. 47). This division of circulation space makes

⁴⁷ "Ammersooiseplein." Paul De Vroom Architecten. Accessed November 16, 2016. <http://www.pauldevroom.com/?portfolio=ammersooiseplein>.

it unlikely that people on the lower floors will interact with residents of the higher floors, unless they do so on the ground floor in a communal space.



Figure 45 Ammersooiseplein from public plaza

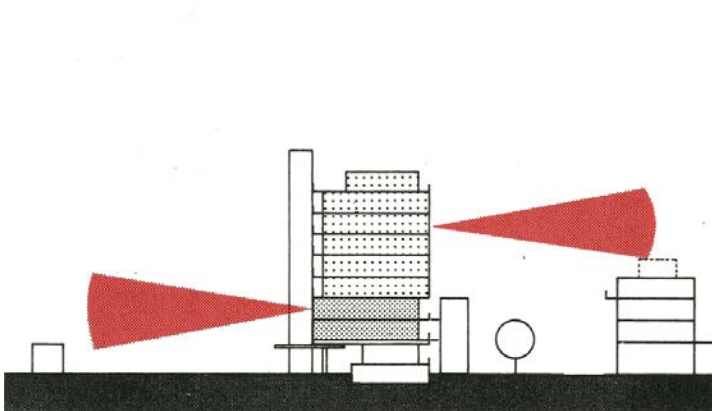


Figure 46 Ammersooiseplein views diagram

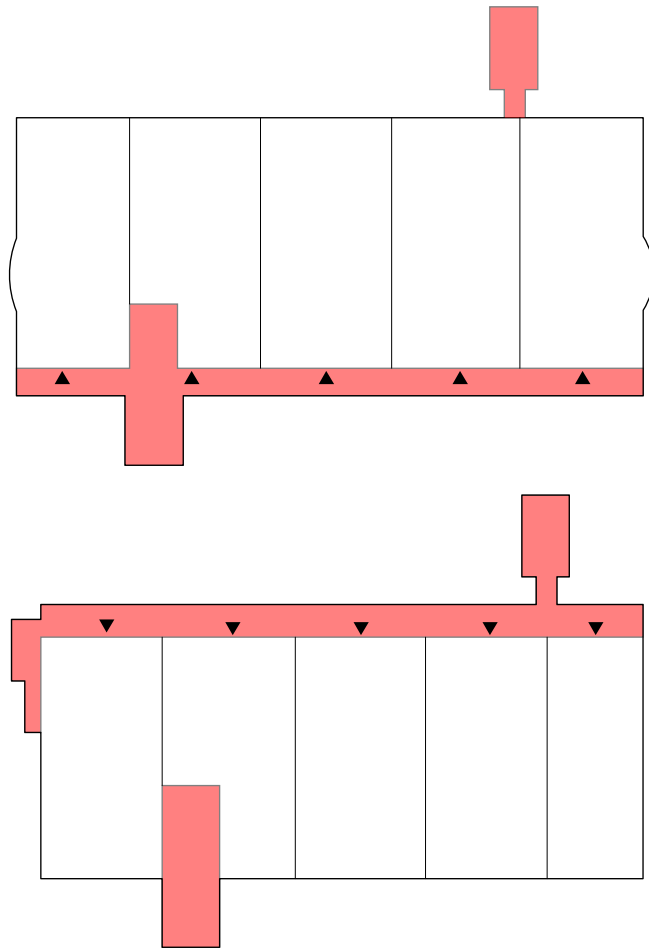


Figure 47 Ammersooiseplein typical floor plans, with highlighted circulation

Best Practices

This study has analyzed three different typologies commonly used to design public housing projects in order to determine which scheme is most effective in creating a sense of community among residents. Projects were analyzed in regards to circulation and common spaces in an attempt to understand to what extent these areas play in the success or failure of a housing project. Where applicable, testimonials from residents were used to portray the views of residents who have lived in these housing projects.

The projects selected for the tower portion of this study utilize elevators and stairs to bring residents to their specific floor, but then also use a varying degree of horizontal hallway space branching off away from the elevators in order to move residents to their apartment. These projects often employ a common entry space, such as a lobby, where residents can gather, but they are not designed for large social activities. Tower projects that are comprised of one building may or may not have large designated community spaces. The first floor of Hatert Tower is a health center, but there is a plaza outside that serves as a common space for both the residents of the tower and the community as a whole. In Keeling Tower the central tower containing the elevators and stairwells were meant to serve as a place for people to gather and chat, but are seldom used in this way.

While the site design strategy for a courtyard project is typically straightforward (a perimeter space occupied by building and an open space in

the center) site design for towers can be more ambiguous. In some instances, like Keeling Tower, the tower is located amidst other buildings in the city, and thus does not have an extensive amount of green space around it. In other cases, such as Baruch Houses, many nearly identical towers are placed seemingly haphazardly on a large site (twenty-seven acres in Baruch Houses), leaving un-programmed green space in between many of the buildings. The outdoor areas that are designed as community spaces, such as a basketball court and soccer fields, are located in close proximity to each other and promote more interaction between residents than the wandering walking paths that weave between buildings.

Slab type projects employ the most extensive circulation strategies. Depending on the size of the building, a number of stairs are used and connected to a stretch of hallway (or outdoor deck space) that typically runs the entire length of the building. The Smithsonian's street in the air concept suggests that the hallway is more likely to be conducive to social interactions among residents than stairwells, although the streets in the sky of Robin Hood Gardens are said to have encouraged criminal activity.⁴⁸

In slab projects with multiple buildings on the site, such as Robin Hood Gardens and Brandhofchen, common green space and gardens are placed between buildings. A lack of reviews from residents make it hard to determine how much these types of spaces are utilized or enjoyed, but they are often

⁴⁸ Webb, Shiri. "Robin Hood Gardens." Architecture.com. Accessed November 20, 2016. <https://www.architecture.com/Explore/Buildings/RobinHoodGardens.aspx>.

designed as a way to move people from one building to the other (Brandhofchen) or as a place to relax (Robin Hood Gardens).

Overall, courtyard style projects appear to be the most effective for establishing community. These projects often utilize stairs and elevators to allow access to apartments, and limit the use of hallways as much as possible. In multiple cases, such as Queensbridge Houses and Harlem River Houses, the use of hallways is completely eliminated. In regards to Alison and Peter Smithson's work, one may think that the elimination of hallway space impedes the establishment of community, since residents do not have one common route that they all must use in order to gain access to their apartment. The projects that completely eliminate the use of hallway spaces in the courtyard type actually have the largest number of positive reviews. The social space that Alison and Peter Smithson encourage is more accurately portrayed as the courtyard space in these types of projects.

The success of the courtyard type could be attributed to the common community spaces they inherently possess, and the way buildings are accessed in regards to this common space. Entry into the apartments in Harlem River Houses typically requires residents to go through the main courtyard space, known as the pit, where most of the community events for Harlem River Houses take place. Even if residents do not go through this specific courtyard, there are smaller courtyards throughout the project that a resident must walk through in order to access the stairwell leading to their apartment unit. In Queensbridge Houses, the entries to apartments face open spaces and the freestanding

community center buildings are located at the heart of the site of the development.

Courtyard projects where the central courtyard space is made up of a sufficient amount of paved surface appear to be more effective in creating a sense of community. The courtyard space of Knickerbocker Village is predominantly garden area, with benches and a walking path throughout for residents to use. While a nice amenity for the residents of Knickerbocker Village, the set up of this common space makes it difficult for any substantial activity such as community gathering or a game of basketball to take place. In addition, a resident of Knickerbocker Village does not have to go through the courtyard to reach their apartment, unlike Harlem River and Queensbridge Houses.

While one typology may stand out over the rest for designing public housing, it must be noted that community involvement and sensitivity to place can also play large roles in the success or failure of a housing project. Architects of the Harlem River Houses noted that they “tried to create a humane architecture”⁴⁹ and worked to create a project that matched with the surrounding city context. Denys Lasdun met with the would be residents of Keeling Tower to better understand what they wanted out of a home before beginning the design process. These meetings led Lasdun to discover that the residents’ desired a sense of privacy, which inspired Lasdun to separate the living spaces of the

⁴⁹ Horsley, Carter B. "At Project in Harlem, It's a Time of Pride." *The New York Time*, July 13, 1975. Accessed November 9, 2016.
<http://www.nytimes.com/1975/07/13/archives/at-project-in-harlem-its-a-time-of-pride-at-a-housing-project-in.html>.

tower from the circulation space. Even when Keeling Tower began to show structural problems and signs of degeneration, residents said they would be happy to move back into the tower as soon as those problems were fixed. Despite the fact that Alison and Peter Smithson mindfully attempted to solve the problems of public housing and create a strong sense of community in Robin Hood Gardens, the majority of its residents were in favor of its demolition.

This thesis has concluded that in terms of typology, courtyard projects provide the greatest sense of community. The courtyard creates a common area that everyone must use in order to access their apartment, and is the area where residents are most likely to interact with one another. The specific role of circulation spaces in regard to the success or failure of a public housing project remains inconclusive. While these spaces can sometimes be seen as an extension of the common space of a building, and are noted in some projects to be places where people gather, they are often designed to be as small and efficient as possible with their primary intention being to move people from the ground floor of a building to their apartment with little thought put towards fostering interactions between residents.

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Figures

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Figure 2: Created by author

Figure 3: Created by author

Figure 4: Team X Primer

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