

MIT OpenCourseWare  
<http://ocw.mit.edu>

11.941 Learning by Comparison: First World/Third World Cities  
Fall 2008

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.

# DESIGN

Principles & Practices:  
*An International Journal*

Volume 3, Number 4

The Impact of Urban Design Elements on the  
Successes and Failures of Modern Multi-family  
Housing: A Comparative Study of Robert Taylor  
Homes, Chicago and HanGang Apart Complex,  
Seoul

Jae Seung Lee

DESIGN PRINCIPLES AND PRACTICES: AN INTERNATIONAL JOURNAL  
<http://www.Design-Journal.com>

First published in 2009 in Melbourne, Australia by Common Ground Publishing Pty Ltd  
[www.CommonGroundPublishing.com](http://www.CommonGroundPublishing.com).

© 2009 (individual papers), the author(s)  
© 2009 (selection and editorial matter) Common Ground

Authors are responsible for the accuracy of citations, quotations, diagrams, tables and maps.

All rights reserved. Apart from fair use for the purposes of study, research, criticism or review as permitted under the Copyright Act (Australia), no part of this work may be reproduced without written permission from the publisher. For permissions and other inquiries, please contact  
<[cg-support@commongroundpublishing.com](mailto:cg-support@commongroundpublishing.com)>.

ISSN: 1833-1874  
Publisher Site: <http://www.Design-Journal.com>

DESIGN PRINCIPLES AND PRACTICES: AN INTERNATIONAL JOURNAL is peer-reviewed, supported by rigorous processes of criterion-referenced article ranking and qualitative commentary, ensuring that only intellectual work of the greatest substance and highest significance is published.

Typeset in Common Ground Markup Language using CGCreator multichannel typesetting system  
<http://www.commongroundpublishing.com/software/>

# The Impact of Urban Design Elements on the Successes and Failures of Modern Multi-family Housing: A Comparative Study of Robert Taylor Homes, Chicago and HanGang Apart Complex, Seoul

Jae Seung Lee, Massachusetts Institute of Technology,  
Massachusetts, USA

*Abstract: This study explores the role of urban design in the successes and failures of modern multi-family housing developments. Similar housing developments, which are high-rise multi-family apartments laid out in super-blocks, have been implemented around the world. However, their results have been polarized despite their similar urban design elements. To shed light on the contribution of design elements to successful housing developments, this study compares two housing projects: one is Robert Taylor Homes, Chicago, built in 1962, which was a miserable failure that ended up with its demolition in 2005. The other is HanGang Apart Complex in Seoul, which has been successful since its completion in 1971 and catalyzed massive developments of “Apart,” which is an abbreviation for “apartment,” in Seoul. The different outcomes of the two similar projects raise the following questions: What are the design elements that contributed to the successes and failures of modern multi-family housing? In what ways did these design elements influence the two housing projects? The goal of this study is to gain insight into better urban design strategies for housing development in two cities, Chicago and Seoul. To offer recommendations for urban designers and planners, the urban design theories are applied and modified to the findings drawn from the comparative analysis of the two projects. The study argues the following: spatial distinction and sequence, through a series of territory, promote the sense of neighborhood and ownership; linear retail strips invite not only residents but also strangers, which creates a vibrant public space and encourages more social activities; strategically enclosed neighborhood public spaces under natural surveillance provide amenities and promote social activities; diverse unit sizes and types invite various people in terms of income levels or occupations, thus supporting mixed-income neighborhoods.*

Keywords: Urban Design, Modern Multi-Family Housing, Chicago, Seoul, Comparative Study, Territoriality, Linear Retail Strip, Neighborhood Public Space, Diverse Housing Choices

## Overview

**T**HIS PAPER EXPLORES the role of urban design in the successes and failures of modern multi-family housing developments. Similar housing developments, which are high-rise multi-family apartments laid out in super-blocks, have been implemented around the world. However, their results have been polarized. Through an analytical framework, this study investigates two housing projects: one is Robert Taylor Homes, Chicago, built in 1962, which was a miserable failure that ended up with its demolition in 2005. The other is HanGang Apart Complex in Seoul, which has been successful since its completion in 1971. The different outcomes of two similar projects raise the following

questions: What are the design elements that contributed to the successes and failures of modern multi-family housing? In what ways did these design elements influence the two housing projects?

The goal of this study is to gain insight into better urban design strategies for housing development in two cities, Chicago and Seoul. To offer recommendations for urban designers and planners, the urban design theories are applied and modified to the findings drawn from the comparative analysis of the two projects. The study argues the following: spatial distinction and sequence through the sense of territory promote the sense of neighborhood and ownership, and keep neighborhoods defensible; linear retail strips invite not only residents but also strangers, which creates a vibrant public space; strategically enclosed neighborhood public spaces under natural surveillance provide amenities and promote social activities; available choices of housing accommodate the diversity of communities by meeting needs and preferences of the residents.



Figure 0 Left: The Aerial View of Robert Taylor Homes, (Source: <http://www.angelfire.com>), Right: The Aerial View of Hangang Apart Comple

## Background

How can urban design contribute to successful housing developments? This is a study of urban design's role in the successes and failures of modern multi-family housing. The modern multi-family housing development derived from Le Corbusier's vision of modern cities, "Tower in the Park," which proposed cities that consist of high-rise buildings in landscapes such as parks. Another master of modern architecture, Ludwig Mies van der Rohe, influenced the architectural typology of modern high-rise multi-family housing by proposing utilitarian high-rise apartments made of exposed concrete frames, glass, and steel. This modern model was favored by architects and planners because high-rise buildings oc-

cupied less land and provided more sunlight and unobstructed views. The other advantage of modern housing, probably the most important one, was that high-rise housing can be standardized so as to be constructed quickly and inexpensively (Rybczynski, 1993). Thus, high-rise apartment towers were accepted as the most efficient solution for providing public housing during the 1950's and 1960's, in many cities in first world and third world as well.

With this new vision, the Chicago Housing Authority (CHA) implemented urban renewal projects around the city. One Chicago urban renewal project, Robert Taylor Homes, was planned to provide decent affordable housing. In Seoul, modern high-rise housing, called "new town development" first emerged in the 1950's, in order to accommodate an increasing urban population. This new type of housing was called the "Apart," which is an abbreviation for "apartment." HanGang Apart Complex, completed in 1971, was a precursor of later massive new town developments in Seoul. I selected these two projects for comparative analysis because they are similar in architectural typology, urban design, and the size of development (see Figure 1). Also, there are physical differences in detail between the two developments. Most importantly, both projects marked the turning points of the housing development trends in Chicago and Seoul. The similarities and differences of the two contrasting cases reveal the urban design mechanism that works in a specific socio-economic context. The two projects demonstrate how the physical designs interpreted the housing policies of the two cities, and how the results of these interpretations influenced the residents' behavior and perceptions. Thus, by tracing these dynamics, the study of the two projects will shed light on the contribution of these projects' physical environment to the successes and failures.



Figure 1 Left: Robert Taylor Homes, Right: HanGang Apart Complex

## Analytical Framework

I have conducted this study through the analysis of urban design theory, urban planning literature, and empirical evidence. The theoretical frame of this paper is the environment-behavior study that is a field of relationships between the built environment and people. Environment-behavior studies argue that certain forms of the physical environment cause or encourage specific human behavior in response to the built environment. Thus, by understanding how people use and behave in given environments, it may possible to build an environment that promotes positive behavior (Moudon, 1992). I have proposed to apply the theories to the two cases in order to test whether these theories are still valid within specific contexts that are different from the contexts of the theories. This test will lead to lessons for urban

designers by modifying and adopting the insight from previous studies into modern multi-family housing in the two cities.

Normative theories, in the field of environment-behavior studies, that emphasize the “what should be” provide the basis for deliberately designing urban form. Alexander et al. (1977) proposed the norms and values of city forms in many different scales. He developed patterns that define healthy towns or communities. Lynch & Hack (1984) summarized site design strategies for designers. They proposed specific techniques for designing urban development projects according to a site design process. Newman (1973) investigated the possibility of the physical environment that may be able to prevent crimes. He argued that careful building configurations can reduce crime rates by controlling activity patterns.

New Urbanism is another significant movement because the post Robert Taylor Homes development is based on the idea of New Urbanists. New Urbanism supposes that more dense and mixed-use neighborhood developments can promote more walking and local activities. New Urbanists seek to build walkable and transit-oriented neighborhoods for vitalizing urban areas, preserving countryside by compact developments, and minimizing developments’ negative impact on the local and regional environments (Calthorpe & Fulton, 2001).

Urban planning literature, particularly the works of Sudhir Alladi Venkatesh and Valerie Gelezeau has been explored to understand how people have lived and perceived housing projects and how socio-economic factors have influenced the successes and failures. Gelezeau (2004) investigated Korean Aparts in diverse ways, for example conducting in-depth interviews with residents, collecting historic photos and maps, reviewing literatures, and analyzing the Korean government’s housing policy. She concluded that the connection between major private contractors and the Korean government supported the success of Korean Apart developments, and people favored Aparts because the investment in Aparts became the most profitable model. Venkatesh’s ethnographic study of Robert Taylor Homes demonstrates the social structure of the poor and segregated community. He argued that Robert Taylor Homes could have sustained a viable and healthy community, although the residents are associated with illegal sales (guns and drugs) and street gangs (Venkatesh, 2000).

While demonstrating insightful arguments regarding the successes and failures, this literature explored the social and economic factors of the two projects. The impact of their physical environment has been rarely discussed. I have developed an analytical framework to focus on the physical aspect of the two communities. This study compares Robert Taylor Homes in Chicago and HanGang Apart Complex in Seoul in order to address the following questions: What are the design elements that contributed to the successes and failures of modern multi-family housing? In what ways did these design elements influence the two housing projects? By comparing the two projects, this study aims to provide urban design lessons for successful housing developments in Chicago and Seoul.

The comparison is conducted through two stages of an analytical framework: (1) identifying successful and unsuccessful outcomes of the two developments and (2) analyzing design elements that contributed to the successes and failures. First, the outcomes of the two projects will be evaluated based on three measures: (1) the demographics (income level, employment status, and crime rate) of the residents, (2) social integration and empowerment, and (3) the replicability of the development patterns. Second, I will explore the built environment of the two projects to identify significant design elements in terms of: (1) the accessibility of

locations, (2) the diversity of land uses, (3) the spatial distinction by building configuration, (4) the vibrancy of public spaces, and (5) the variance of housing units.

### ***The Successes and Failures of Modern Multi-Family Housing***

This section evaluates the successes and failures of the two projects. The success can be measured by basic demographics, such as income level and employment status of residents. The higher income level and the more stable job status the residents retain, the more successful the projects are. However, the demographics should be carefully treated, because the differences in demographics can be not only the outcome but also the cause of the success or failure of developments. Also, social integration and empowerment can be a strong indicator of successful developments. Well integrated residents tend to be satisfied with and attached to their society, so they try to sustain their own neighborhood. Social integration and empowerment can be operationalized through indicating the presence of neighborhood associations and their regulations. Replicability is the last indicator that presents how the projects were evaluated by later planners. Successful projects tend to be replicated in other places. In contrast, once a certain model fails, another model tends to substitute for the failure. By evaluating the two projects with these measures, the study concluded that Robert Taylor Homes was an obvious failure, whereas HanGang Apart Complex has been a success (see Figure 2).



Figure 2 Left: The Demolition of Robert Taylor Homes, Right: Massive Apart Developments in Seoul (Kang, 1999)

### **The Modern Ghetto: Robert Taylor Homes, Chicago**

Robert Taylor Homes is regarded as one of the most miserable failures of the United States' public housing development. This failure was the symbol of the end of urban renewal in Chicago. Although the modern ghetto ended up being demolished, the legacy of this failure still remains. The superblocks of Robert Taylor Homes remain empty. The Chicago Housing Authority plans to redevelop this site with different strategies, aiming at building a mixed-income neighborhood. However, can the CHA's new urban design achieve this goal?

#### ***Demographics of Residents***

Initially, the demographic characteristics of Robert Taylor Homes were a mixture of equal proportions of middle-class, working-class, and poor tenants. In the late 1960s, however, Chicago's economic and market forces caused the socioeconomic decline of Robert Taylor



Homes' tenants. First, job opportunities for the African American population in Chicago diminished in the early 1970s. Second, the CHA's budget problems created maintenance shortfalls such as plumbing and elevator maintenance, which threatened the quality of life, particularly in the high-rise public housing. Third, the housing shortage in the 1950s and early 1960s had eased in Chicago, which provided housing options to the working-class. Soon, working-class, two-parent families left Robert Taylor Homes, and non-working, female-headed families filled the vacancy. The population dropped and became homogeneous, which intensified poverty concentration and racial segregation (Hunt, 2001). Finally, these homogeneous demographic characteristics ended up as a miserable failure.

### ***Social Integration and Empowerment***

Despite Robert Taylor Homes' image as a place of drugs, crime, and violence, there were certain types of social integrations in the community. Its social groups were highly, albeit informally, organized by community members. Many young males, although members of street gangs, had jobs and went to schools. They were also members of their families as fathers or sons (Hammett, 2003). The street gangs functioned as a peer group for the young males. During the 1960s and 1970s, "the Mamas Mafia," that was an informal group of women emerged as community leaders. The women watched over their children and confronted street gangs in the public spaces (Venkatesh, 2000). However, these social activities were either associated with crime or, although positive, not strong enough to keep their neighborhood healthy.

### ***Replicability of the Development Pattern***

Since the demolition, Robert Taylor Homes' development pattern has never been replicated in Chicago. Instead, New Urbanism emerged as an alternative and HOPE VI program with low-scale, neo-traditional buildings was planned to replace urban renewal projects. HOPE VI's building typology can be characterized as a low-rise, walk-up apartment, which was a prevailing housing type before World War II. The dream of modern high-rise housing was dispersed in Chicago and may not be repeated again in the future.

## **The Republic of Apart: HanGang Apart Complex, Seoul**

HanGang Apart Complex was successful in changing negative perceptions about modern multi-family housing, Apart. Its success had enormous impact on the housing development pattern in Seoul. Although Seoul has been the capital of Korea for 600 years, massive Apart developments reshaped a remarkable portion of this old city's contemporary urban form.

### ***Demographics of Residents***

HanGang Apart Complex has been one of the most affluent communities in Seoul. The Korean government deliberately tried to attract wealthy people to Apart by advertising Apart as a convenient, clean, and even luxurious housing type. As a consequence, the upper-middle class, public officials, and foreigners became the majority of its residents. Once wealthier people occupied it, HanGang Apart Complex began to be perceived as an affluent community and the real estate price significantly increased. The positive perceptions and the increasing

real estate price kept attracting wealthier people and preventing poor people from moving to the community. HanGang Apart Complex has been able to retain wealthier people. In this sense, it may be appropriate to consider HanGang Apart Complex as a successful housing development (Gelezeau, 2004).

### ***Social Integration and Empowerment***

The majority of social activities in HanGang Apart Complex have taken place through women's organizations. While most male residents stay at their working places during the day, housewives organized formal and informal social groups. The official neighborhood organization was also run by women. They regulated certain activities such as motorcycling or soliciting. Also, wealthy housewives maintained the environment to keep their community clean and safe, as well as the price increasing. This social integration demonstrates that the housing development successfully established an active community.

### ***Replicability of the Development Pattern***

HanGang Apart Complex triggered massive Apart development in Seoul. The Apart became a financially and socially successful model and HanGang Apart Complex's typology has been repeatedly replicated. Seoul was rapidly filled with Apart complexes since the success of HanGang Apart Complex. This radical transition of urban form fundamentally changed the traditional structure of Seoul as well as the lifestyle of citizens. Seoul has become the Republic of Apart. In spite of the negative aspect of monotonous Apart developments, the success of HanGang Apart Complex is undeniable.

What are the factors that contributed to these contrasting successes and failures of similar projects? These results are the outcomes of complex dynamics among various factors, such as the housing policy of the two governments, real estate mechanisms of the two cities, and the built environment of the two projects. However, although it is important to understand the dynamics between the factors, I will focus on the urban design elements that contributed to the results, in order to explore the role of urban design in housing development.

### **Significant Design Elements: Robert Taylor Homes and HanGang Apart Complex**

In this section, I will discuss significant design elements that contributed to the successes and failures of two housing projects. In general, Robert Taylor Homes and Hangang Apart Complex are similar with regard to their architectural typologies and sizes. Both projects are composed of monotonous concrete-freestanding buildings in superblocks. When completed on 80-acre sites in Bronzeville of the South Side of Chicago, in 1962, Robert Taylor Homes was the largest housing project in the United States. It consisted of 28 freestanding 16-story buildings with 4,321 apartment units (Wright, 2002). HanGang Apart Complex was composed of a series of Apart developments which included Public Official's Apart, HanGang Mansion Apart, HanGang Foreigner's Apart, and HanGang Private Apart. These Apartments were built over time on 74-acre sites with 3,260 apartment units (Kang, 1999) (see Figure 3).

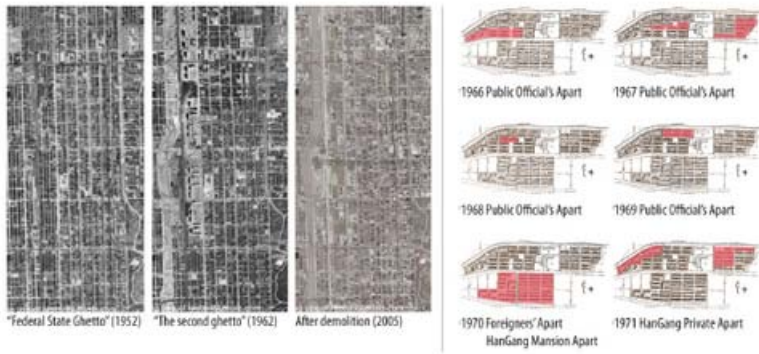


Figure 3 Left: The Historic Aerial Photos of Robert Taylor Homes, Right: The Stages of HanGang Apart Complex development (Kang, 1999)

Despite these similarities, the two projects demonstrate different design elements with regard to locations, land uses, building configurations, public spaces, and housing units. These differences may provide clues to understand the inconsistent results between the two housing developments. Therefore, by comparing these elements, I will explore how these elements work in the specific socio-economic contexts.

**The Accessibility of Locations**

The locations of both projects were isolated from major activity centers such as central business districts, although road systems and public transit provide access to the communities. Robert Taylor Homes was close to the Dan Ryan Expressway that is a major highway of the Chicago metropolitan area. The Red line “L” that runs along the Dan Ryan Expressway and elevated green line “L” had stops around Robert Taylor Homes. Thus, the residents of Robert Taylor Homes seemed to have enough public transportation options. In HanGang Apart Complex, the arterial road that runs through the middle of the complex provided the vehicular access and bus system to the community. Seoul’s subway system could not cover the community (see Figure 4).



Figure 4 Left: the Location of Robert Taylor Homes, Right: the Location of HanGang Apart Complex

Regardless of the public transit and the expressway, Robert Taylor Homes was socially segregated. It was located within Chicago's South Side "black belt" ghetto where African Americans were confined by racial segregation. This location was selected as a result of the social and racial conflicts. The Chicago Housing Authority proposed to build public housing on a vacant land in a white area. The city's aldermen and racists refused racial integration by opposing the CHA's site selection. Instead, the current site in the South Side black belt was approved to make second ghetto on the top of the first one (Hunt, 2001).

Along with the policy for the segregation, the physical environment around Robert Taylor Homes was also deliberately planned to confine the African American community within a boundary. The Dan Ryan Expressway was not planned to connect Robert Taylor Homes to downtown Chicago but to separate the public housing from the white neighborhood of Bridgeport. The elevated railroad track on the east site of the site also blocked the neighborhood from the surrounding areas with the Expressway. Consequently, Robert Taylor Homes was bounded by the Expressway, the railroad, the existing ghetto, and another public housing project south of Illinois Institute of Technology (Wright, 2002).

HanGang Apart Complex was spatially separated from Seoul's activity centers. The site was located on the reclaimed land on the north edge of the Han River (Kang, 1999). On the north of HanGang Apart Complex, the U.S. military base separated the community from the inner city of Seoul at that time. The only access was an arterial road which is the main street of the complex. While subway services were not provided, the only public transportation was a bus service. These physical elements limited the accessibility to the HanGang Apart Complex.

The accessibility to the two projects does not seem to be a critical factors of the success and failures. Robert Taylor Homes had better public transportation options than HanGang Apart Complex, but this advantage did not contribute to the success of Robert Taylor Homes. Rather, the demographic aspects had a strong impact on the accessibility, for example, most rich residents of HanGang Apart Complex owned their own automobiles.

### ***The Diversity of Land Uses***

Both projects had neighborhood facilities (playgrounds, social rooms, and schools). However, Robert Taylor Homes' neighborhood facilities were not sufficient in size or quality considering its population (27,000 residents and 2,000 children); HanGang Apart Complex's facilities have been sufficient and well utilized. The retail strip of HanGang Mansion Apart that faces the main arterial road is the most distinctive difference (see Figure 5).



Figure 5 Left: Other Uses around Robert Taylor Homes, Right: Retail and Neighborhood Facilities at HanGang Apart Complex (Red: Retail, Yellow: Neighborhood Facility)

In an effort to provide social services, the CHA leased apartments to social agencies, but the neighborhood facilities proved woefully insufficient to satisfy the residents’ needs. In 1964, the CHA reported that “children lined up seven and eight deep just waiting to use a piece of play equipment [and] . . . upwards of 2,000 children may be cramped into one or two relatively small play areas.” When the Chicago Public Library opened a reading room in one Taylor apartment in 1969, this reading room was quickly overcrowded by residents, but only one additional reading room was added to meet the demand. Although an ambitious pre-school program for 425 children was launched by a neighborhood settlement organization, several thousand children were living in Robert Taylor Homes (Hunt, 2001).

The insufficiency derived from a deliberate underestimation of the residents’ demographics. The Chicago School Board intentionally underestimated the number of children, resulting in immediately insufficient educational facilities. In 1960, the CHA expected 10,583 elementary school children at Robert Taylor Homes to be added to the area. The School Board planned three new schools that could accommodate only 7,765 students. The insufficient neighborhood facilities derived not from planners’ incapability or mistakes, but rather from intentional disregard. Additionally, since Robert Taylor Homes was planned as a single-use residential neighborhood, no retail was included.

In contrast, HanGang Apart Complex included sufficient public facilities, including schools, retail, and other social spaces. This idea was rooted in Clarence Perry’s idea, the neighborhood unit. By proposing the neighborhood unit formula, Perry argued that the planning process should take into consideration not only dwellings but surrounding environments embracing public facilities, such as an elementary school, retail stores, and public recreational facilities. The formula was designed to promote accessibility to an elementary school, provide sufficient common open space as well as retail shops, and reduce the risk of automobile accidents. Essentially, the formula consisted of six values called Neighborhood

Unit Principles: the size of a residential unit should accommodate population for which one elementary school is required; boundaries wide enough to facilitate by-passing traffic should surround the unit; open spaces should be provided to accommodate communal activities; institution sites including the school or church should be grouped at a central point or commons; local shops should be sufficiently provided along the perimeter of the unit; the internal street system should be designed to facilitate circulation and discourage its use by through traffic. The principles were for professional planners to use in the process of a development plan (Perry, 1939).

In Korea, Perry's idea had been introduced by the mid 1950s. HanGang Apart Complex was the first example in Korea of a housing project based on the Neighborhood Unit. This project consisted of a series of 'Apart' developments. Although each development was built over time, they formed one neighborhood complex centered around public facilities including schools, retail, and markets. The public school and retail faced the four-lane main street running through the middle of the housing complex (Kang, 1999).

Although HanGang Apart Complex had three schools with large playgrounds, as with Robert Taylor Homes, the school facilities were not physically sufficient. There were many students, around 60 students per class. However, large classes with 60 students were a normal size in Korea in the 1970's and 1980's. While there were general concerns regarding insufficient schools in Korea, the insufficiency regarding HanGang Apart Complex's schools was not more serious than in other communities in Korea. Moreover, despite overcrowded classes, the schools seemed to function well to educate students. Three Apart buildings that face the main street have retail and community spaces on the first and second floors, providing sufficient social rooms and a linear retail strip. Other units on the top of the retail are residential units, but these residential units along the main street were not favored because residents did not like the noise from the main street.

### ***The Spatial Distinction by Building Configuration***

In HanGang Apart Complex, despite the boring repetition of identical buildings, there is a spatial sequence from public territory (a retail strip), to neighborhood territory (Apart clusters), and then to private territory (Apart buildings). In Robert Taylor Homes, the spatial distinction was not clear in spite of the intention of clustering apartment buildings (see Figure 6).



Figure 6 Left: The Site Plan and Photos of Robert Taylor Homes (Miller, 1992), Right: The Site Plan and Photos of HanGang Apart Complex (Kang, 1999) (Red: a retail Strip , Yellow: Apart Clusters)

Robert Taylor Homes’ 28 identical high-rise buildings created a monotonous and oppressive environment. Buildings were grouped in U-shapes to surround green open spaces. However, each building seems to stand alone rather than creating a territory defined by the buildings. As a result, the open spaces were just vacant space without a sense of place. The courtyards, playgrounds, and green spaces were not distinguished as public or neighborhood territory.

The building configurations of HanGang Apart Complex were even more monotonous and dull. Simple I-shaped buildings were repeated without variation. Fortunately, since HanGang Apart Complex was composed of four different Apart clusters, each cluster acquired its own neighborhood territory that was distinguished from other clusters. The area along the main street was a public territory that was spatially defined by Apart buildings and retail shops on the ground level. The activities in the public territory were different from those of neighborhood territory. On the main street, many strangers as well as the residents appeared due to the shops, but these activities did not encroach on the neighborhood territory. This spatial distinction and sequence allowed the residents to stay close to the vibrant street but, at the same time, maintain a distance to protect their neighborhood from the commotion of the main street.



### ***The Vibrancy of Public Spaces***

Robert Taylor Homes' open spaces were designed as neighborhood public spaces such as playgrounds and courtyards. But these spaces were not safe or vibrant. Instead, open-air corridors at the edge of the buildings were the playgrounds of children who had lost their playgrounds outside. Neighborhood public spaces in HanGang Apart Complex, in comparison, were well used by residents. Even though most open spaces between buildings were turned into parking lots, children enjoyed the playgrounds between buildings and many residents as well as strangers were walking through the main street in the middle of the Apart complex (see Figure 7).



Figure 7 Left: The Open Corridor and the Courtyard of Robert Taylor Homes (Kuo, Sullivan, Coley, & Brunson, 1998), Right: The Playground and the Retail Strip of HanGang Apart Complex (Kang, 1999)

In Robert Taylor Homes, the relationship between buildings and open spaces did not give a sense of enclosure, which is important for creating positive quality of open space (Alexander, Ishikawa, & Silverstein, 1977). Although surrounded by the set of three buildings grouped in a U-shape, the courtyards were not well defined because the buildings were not close enough to tightly enclose the open space and one side of the courtyard was wide open to street. Moreover, the open-air circulation corridors were facing the courtyards instead of the windows of housing units. This configuration decreased the visual connection between residents in their housing and the courtyards, which might resulted in a lack of natural surveillance on the open spaces (Jacobs, 1961). The poor landscaping of the open spaces was another problem. Carefully planted trees and other landscape elements could have relieved the sterile atmosphere. However, architectural and landscape elements of Robert Taylor Homes were inappropriately designed to create vibrant open spaces.



In HanGang Apart Complex, although I-shaped apartment buildings were monotonously repeated, the distances between buildings were relatively shorter, compared to the Robert Taylor Homes, and consequently the open spaces were more tightly enclosed. The multiple rows of buildings also contributed to the higher degree of enclosure. Most housing units were facing the open spaces and the retail shops of the main street were also facing the sidewalks. These elements contributed to the vibrancy of the HanGang Apart Complex's open public spaces, regardless of the dull and boring architecture. Many children played in the playgrounds and their parents could watch them from their homes. Although the spaces between buildings that were supposed to be parks were mostly turned into parking lots, dangerous behavior and crime were very rare in the open spaces. The main street area was also well occupied and there was no concern about safety and security, despite complaints about the noise.

**The Variety of Housing Units**

Robert Taylor Homes had similar units, whereas HanGang Apart Complex has diverse unit sizes and unit layouts (see Figure 8). This contrast derived from the different planning processes and goals between the two cities.

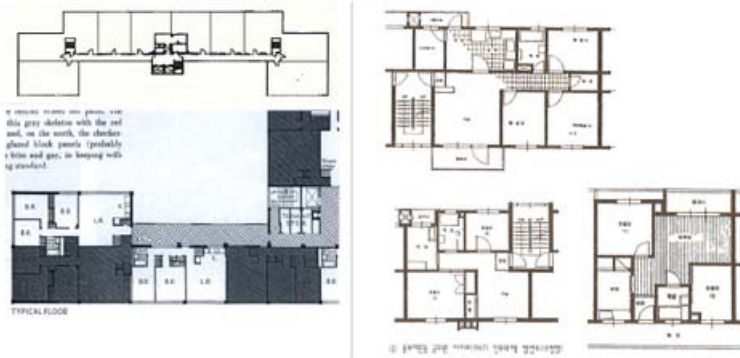


Figure 8 Left: The Floor Plan of Robert Taylor Homes (Miller, 1992) and The Unit Plans of Ogden Courts (SOM, 1950), Right: The Housing Units of Hangang Apart Complex (Kang, 1999)

The housing units of Robert Taylor Homes were poorly designed and monotonous, albeit relatively large. This design problem has been blamed on architects and planners who adhered to “modern” architecture theory. However, the federal government’s obsession with low cost was mainly responsible for the poor design. The Chicago Housing Authority officials recognized the problems of high-rise public housing and proposed low-rise designs. But federal officials rejected CHA’s scheme because its cost was higher than high-rise housing. The total cost per unit was limited to \$17,000 including land cost, which was considerably lower than that of private housing developments. Moreover, 79% of the units at Robert Taylor Homes had three or more bedrooms because the target population, low-income black families, tended to have many children and prefer larger units with many rooms. The larger units decreased the available budget per square foot (Hunt, 2001). Due to the limited budget,

no private balconies or terraces were provided, and kitchens and bathrooms were poorly equipped. As a result, most housing units of Robert Taylor Homes were large but poorly equipped and maintained.

In contrast, the diversity of housing units of HanGang Apart Complex was not the result of intentional and coherent design, but the consequence of a series of experimental projects of the Korean government to test the possibility of Apart. The four Apart clusters (Public Officials Apart, HanGang Mansion Apart, HanGang Foreigners Apart, and HanGang Private Apart) of the complex were built from 1966 to 1971 without a consistent master plan. The Korean government tried to dilute the Apart's negative image at that time and provide Aparts not only to a lower-class but also to a middle-class and upper-middle-class population because Apart was the most cost-effective housing model for solving the housing shortage in Korea.

The first residents were government officials. They might have been the easiest group for the government to recruit. After completion of Public Officials Apart, the government tried to attract the upper-middle class to Apart by building HanGang Mansion Apart. As "Mansion" connotes, HanGang Mansion Apart aimed to be luxurious housing. It had larger units than Public Officials Apart, and provided equipment, such as a gas heating system, a larger kitchen, and balconies, which were revolutionary conveniences at that period in Seoul. HanGang Foreigners Apart was also developed to provide better housing to foreigners in Seoul. Finally, private developers joined this project and developed HanGang Private Apart, which targeted the middle-class with smaller units than HanGang Mansion Apart's units (Gelezeau, 2004).

Through this process, several different unit types that targeted different demographic groups had been provided, which resulted in a mixed-income community whose residents are upper-middle class, middle class, government officials, and foreigners. Therefore, HanGang Apart Complex could succeed in satisfying three different demographic groups because of the variety of its housing units in size and layout and household conveniences (Gelezeau, 2004).

## **Findings and Recommendations**

This paper has discussed the successes and failures, as well as significantly similar and different design elements, of the two housing projects, through the analytical framework. The findings from this exploration will be reflected through urban design theories to gain insight into the role of physical environments in city development processes, and to seek lessons for better urban designs in specific contexts. Below, I will recommend several urban design strategies, mostly for high-rise, superblock housing developments. These suggestions may be more valid for Seoul than Chicago because Chicago has abandoned the modern multi-family housing project after the end of urban renewal, whereas this housing type is still popular in Seoul and other developing countries in Asia. However, since these lessons are derived from the experience of Chicago and Seoul, they may be worthwhile to consider for Chicago's housing developments.

### ***Territoriality***

Spatial distinction and sequence, through a series of territories, promote the sense of neighborhood and ownership. Alexander suggested to lay out spaces of a building so as to create a spatial sequence which begins with the entrance, the most public parts of the building, and

then leads into the more private areas and finally to the most private areas (Alexander et al., 1977). This architectural level of intimacy gradient can be applied to the spatial sequence of territories at the community scale. A private territory at the neighborhood scale is identified by clustering houses. People tend to feel comfortable in their house when the buildings are clustered (Alexander et al., 1977). The residential territories enhance the residents' sense of responsibility and ownership, influencing them to care for their own environment and control the penetration of strangers (Newman, 1973). Retail shops and neighborhood facilities grouped as a cluster form a semi-private territory. The sequence through these neighborhood territories corresponds to the degrees of privateness, similar to the intimacy gradient on an architecture scale.

The U-shaped building configuration of Robert Taylor Homes tried to cluster buildings and create a certain degree of territory. But it failed to provide an intermediate territory that would mediate the relationships between Robert Taylor Homes and the surrounding ghetto. HanGang Apart Complex was composed of four clusters of Aparts in which, despite the dull repetition of identical buildings, each cluster had its own boundary and entrances. The entrances were not gated but defined the boundary for controlling strangers. The main street functioned as a semi-public territory. Through these territories, HanGang Apart Complex created a perceptible spatial sequence, which is likely to have heightened the sense of responsibility of residents. Thus, territoriality may contribute to more neighborly community in modern multi-family housing.

### ***Linear Retail Strip***

A linear retail strip that is mixed with housing invites not only residents but also strangers, which creates a vibrant public space and encourages more social activities. There are many advantages of linear retail strips over scattered retail. Strips with restaurants, clinics, libraries, and meeting rooms serve both a distant and a nearby market. Each shop on a strip has equal opportunities, which allows incremental commercial developments. A strip is flexible, allowing additions and changes. Also, a retail strip is more pedestrian friendly (Lynch & Hack, 1984). Alexander also explained that "shopping centers depend on access: they need locations near major traffic arteries. However, the shoppers themselves don't benefit from traffic: they need quiet, comfort, convenience, and access from the pedestrian paths in the surrounding area." Therefore, he argued that local shopping centers should be encouraged to grow in the form of pedestrian streets (Alexander et al., 1977). New Urbanism also seeks to build mixed-use neighborhoods. Their developments are often associated with the building typology that has retail on the ground floor and residential above. These theories posit that a linear retail strip mixed with housing may be effective for creating vibrant streets. But it is necessary to explore whether this model is still valid for modern multi-family housing in a superblock, because the theories have been tested in different contexts.

Korean Aparts offer empirical evidence that a linear retail strip is effective with modern multi-family housing. In HanGang Apart Complex, the linear retail strip in modern multi-family housing first appeared in Korea. A few later Apart developments also included linear retail strips. These retail strips encouraged street activities and created neighborhood activity zones between the housing and the surrounding areas. As a consequence, they relived the problem of dead streets without activities around the superblocks, which can be observed at many other superblock housing developments. However, despite this positive impact, the

majority of Aparts have not included linear retail strips. Many planners and designers considered retail as a way to promote of Apart sales, disregarding the strips' possibility to mediate the relationship between superblocks and surrounding cities (Kang, 1999). When retail is not important for financial feasibility, most Aparts have been developed as single-use residential areas. The edges of these Aparts complexes become inactive zones. Thus, a linear retail strip will be an appropriate strategy to create a neighborhood semi-public space as a transitional space from urban public activities to neighborhoods social activities.

### ***Neighborhood Public Space under Natural Surveillance***

Enclosed neighborhood public spaces under natural surveillance accommodate healthy neighborhood activities. Every healthy neighborhood requires public outdoor rooms where people can comfortably spend time (Alexander et al., 1977). Outdoor rooms are defined by buildings, trees, and other topographic elements. Although open spaces are partially enclosed, the shape of space and elements can define a "readable" open space with an imaginary boundary. Once readable space is created, it has strong emotional effects: the intimacy of a small space and the exhilaration of an opening in the enclosed space (Lynch & Hack, 1984). Without proper enclosure, open rooms are merely "left out" space (Alexander et al., 1977).

The activities in these open spaces should be visible for natural surveillance. Places that conceal human activities are "cold." To observe and stay close to human activities is entertaining and provokes more activities (Lynch & Hack, 1984). Moreover, natural surveillance, which is an ability to observe public areas and to feel that one is under observation in public areas, has an impact on securing the environment for healthy activities by reducing irrational fears and anxieties (Newman, 1973).

Robert Taylor Homes' open spaces were neither appropriately enclosed nor visible from residential units. Street gangs occupied the open spaces and children were kept in the open corridors, which implies that, to a certain degree, the lack of the sense of enclosure and natural surveillance might contribute to the open spaces becoming dangerous. HanGang Apart Complex also has small open spaces. In an effort to increase the density, the buildings were laid out as close as possible to each other, which created the well enclosed, intimate size of the open spaces. These open spaces were either actively occupied, or at least, did not cause fears or anxieties. Thus, proper building configuration, considering proper building heights, the distance between buildings, the building layout that can enclose open spaces, the visual connection between open rooms and houses, may create vibrant neighborhood open spaces.

### ***Diverse Housing Choices***

Diverse unit sizes and types invite various people in terms of income levels or occupations, thus supporting mixed-income neighborhoods. Alexander has discussed the importance of indefinable neighborhoods and household mix. He argued that "people need an identifiable spatial unit to belong to." He also mentioned the importance of household mix that supports people who have reached different stages in the life cycle. He argued that "no one in the life cycle is self-sufficient." Similarly, no demographic group in the society is self-sufficient. In many cases, a tendency to be separated among social groups can be identified. But the segregation tends to cause many social problems. If the mixed community is beneficial to the

residents and society, how can urban design contribute to identifiable and mixed neighborhoods?

Alexander et al. (1977) advocate keeping neighborhoods small enough to give the residents some degree of autonomy. However, in large cities like Seoul, it may not be realistic to achieve identifiable neighborhoods through controlling the size and population. Rather, it may be more realistic to achieve the identity by differentiating the built environment on several scales, such as housing units and clusters. The differentiated housing types may attract diverse social groups who may have different needs and preferences. Discussing degrees of publicness, Alexander also insisted on making a clear distinction between three kinds of homes: those in quiet areas, those on busy streets, and those that are in between, because people are different and want different kinds of houses.

Seoul's housing policy has aimed at providing housing rapidly and inexpensively to deal with housing shortage. Private developers also prefer uniform units and layouts to minimize cost and maximize their benefit. Although there are different units at HanGang Apart Complex, this diversity is a result of four experimental projects. Most Apart developments after HanGang Apart Complex have only a few unit types due to the government's housing policy and the projects' profitability. The private developers have objected to the Korean government's policy that mandates private housing developments to include small units for the low-income population, because the small units make housing projects less profitable in the Korean housing market. Recently, the housing supply in Seoul has become sufficient and the quality of living environments began to emerge an public interest rather than the quantity of housing supply. Mixed and indefinable neighborhoods may be one way of achieving an improved quality of life.

The HOPE VI program in Chicago needs to consider its physical diversity. The low-rise, neo-traditional buildings of HOPE VI are supported by New Urbanism. However, the building typology is similar to the buildings of the ghetto that Robert Taylor Homes replaced. Without careful consideration, to reintroduce a traditional typology may cause another problem. HOPE VI aims at a mixed-income neighborhood. Can uniform low-rise, neo-traditional buildings achieve this goal?

It may be obvious that such diversity of housing units alone cannot achieve mixed and indefinable neighborhoods. The favorable neighborhoods can only be developed as a result of the various factors' long-term interaction. However, no matter how other factors, such as housing policy or real estate economics, support mixed neighborhoods, it is difficult to accommodate various people without diverse and identifiable housing. Diverse housing that provides choices can satisfy various needs and compensate for improper policies, if any, to maintain the mixed neighborhood. Strategic design and layout of housing units, derived from sensitive analysis of the residents' needs and preferences, is essential for better housing developments.

### ***Limitations and Further Research***

There are inevitable limitations in this study. The two cases of Robert Taylor Homes in Chicago and HanGang Apart Complex in Seoul are extreme cases in the specific political and socio-economic contexts of the two cities. Therefore, the generalizability of this study is limited within those specific contexts. Additional studies of other cases in different contexts may enhance its generalizability, as well as internal validity. Also, there are many factors

such as housing policy and local economics that impact the successes and failures of housing developments. Among these various factors, what is the role of the physical design? A question-how does the built environment interact with other factors?-remains unanswered. Despite these limitations, this study offers the understanding of the contribution of design elements to successful housing developments.

## References

- Alexander, C., Ishikawa, S., & Silverstein, M. (1977). *A pattern language : towns, buildings, construction*. New York: Oxford University Press.
- Calthorpe, P., & Fulton, W. (2001). *The regional city : planning for the end of sprawl*. Washington, DC: Island Press.
- Gelezeau, V. (2004). *Ville géante, cités radieuses*
- Hammett, K. (2003). The other side of the ghetto. *Urban land*, 62(1), 52-54.
- Hunt, D. B. (2001). What went wrong with public housing in Chicago? A history of the Robert Taylor home. *Journal of the Illinois State Historical Society* 94(1), 96-122.
- Jacobs, J. (1961). *The death and life of great American cities*. New York: Random House.
- Kang, B. (1999). *The History of the Multi-Family Housing Planning in Korea*.
- Kuo, F. E., Sullivan, W. C., Coley, R. L., & Brunson, L. (1998). Fertile Ground for Community: Inner-City Neighborhood Common Spaces. *American Journal of Community Psychology*, 26(6), 823-851.
- Lynch, K., & Hack, G. (1984). *Site planning*. Cambridge, Mass.: MIT Press.
- Miller, R. (1992). Housing rehabilitation: poor architecture: a cautionary tale, Robert Taylor Homes, Chicago. *Progressive Architecture*, 73(8), 72-73.
- Moudon, A. V. (1992). A Catholic Approach to Organizing What Urban Designers Should Know. *Journal of Planning Literature*, 6(331).
- Newman, O. (1973). *Defensible space; crime prevention through urban design*. New York: Collier Books.
- Perry, C. A. (1939). *Housing for the machine age* (Vol. Russell Sage Foundation). New York
- Rybczynski, W. (1993). Bauhaus Blunders. *Public Interest*, 113, 82-90.
- SOM. (1950). Open Corridor Design. *Architectural Forum*, 84-85.
- Venkatesh, S. A. (2000). *American project : the rise and fall of a modern ghetto*. Cambridge, Mass.: Harvard University Press.
- Wright, G. (2002). End of the experiment [Robert Taylor Homes, Chicago]. *Architecture*, 91(3), 29-33.

## About the Author

### *Jae Seung Lee*

Jae Seung Lee is an architectural and urban designer and researcher whose practice and research have engaged the global cities of New York, Chicago, and Seoul. His research focuses on the relationships between the built environment and human behavior. Particularly, he explores the impact of the housing developments' built environment on the residents' social activities and travel patterns. He believes that in order to improve our urban environment, professionals should actively communicate with the general public, which led him to write a book about the urbanism of New York in 2008. This book, *New York Streets that Aged with Time*, published in Korea, is an introduction to urban history and theory related to significant places in Manhattan not only for architects but also for non-professionals. As a

senior architect, he worked for Wondoshi Architects Group in Seoul for five years, working on various architectural projects, such as offices, schools, and memorials. He received his Bachelor of Art and Engineering degrees from the Seoul National University and his Master of Architecture and urban design degrees from the University of Michigan.

## EDITORS

**Bill Cope**, University of Illinois, Urbana-Champaign, USA.

**Mary Kalantzis**, University of Illinois, Urbana-Champaign, USA

## EDITORIAL ADVISORY BOARD

**Genevieve Bell**, Intel Corporation, Santa Clara, USA.

**Michael Biggs**, University of Hertfordshire, Hertfordshire, UK.

**Thomas Binder**, Royal Danish Academy of Fine Arts, Copenhagen, Denmark.

**Jeanette Blomberg**, IBM Almaden Research Center, San Jose, USA.

**Eva Brandt**, Danmark Designskole, Copenhagen, Denmark.

**Peter Burrows**, RMIT University, Melbourne, Australia.

**Monika Büscher**, Lancaster University, Lancaster, UK.

**Patrick Dillon**, Exeter University, Exeter, UK.

**Kees Dorst**, TUE, The Netherlands; UTS, Australia.

**Ken Friedman**, Swinburne University of Technology, Melbourne, Australia;  
Denmark's Design School, Copenhagen, Denmark.

**Michael Gibson**, University of North Texas, Denton, USA.

**Judith Gregory**, IIT Institute of Design, Chicago, USA; University of Oslo,  
Oslo, Norway.

**Clive Holtham**, City of London University, London, UK.

**Hiroshi Ishii**, MIT Media Lab, Cambridge, USA.

**Gianni Jacucci**, University of Trento, Trento, Italy.

**Klaus Krippendorff**, University of Pennsylvania, Philadelphia, USA.

**Terence Love**, Curtin University, Perth, Australia.

**Bill Lucas**, MAYA Fellow, MAYA Design, Inc., Pittsburgh, USA.

**Ezio Manzini**, Politecnico di Milano, Milan, Italy.

**Julian Orr**, Work Practice & Technology Associates, Pescadero, USA.

**Mahendra Patel**, Leaf Design, Mumbai, India.

**Toni Robertson**, University of Technology Sydney, Sydney, Australia.

**Terry Rosenberg**, Goldsmiths, University of London, London, UK.

**Keith Russell**, University of Newcastle, Callaghan, Australia.

**Liz Sanders**, Make Tools, USA.

**Maria Cecilia Loschiavo dos Santos**, University of São Paulo,  
São Paulo, Brazil.

**Lucy Suchman**, Lancaster University, Lancaster, UK.

**Ina Wagner**, Technical University of Vienna, Vienna, Austria.