

Curatorial Foreword

Why the FAR (Floor Area Ratio) Game?

Sung Hong KIM, Curator

Of the few dozen articles on architecture and urbanism I have contributed to the Korea Joongang Daily, it was the one entitled “The FAR Game” that received the biggest response from readers. While FAR (Floor Area Ratio) appears to be technical jargon for professionals, it seems that almost every Korean either knows what it is, or has heard about it. If you type *yong-jeong-nyul* (용적률, the Korean word for FAR) on Korean search engines, an endless stream of news, articles, and commentary pops up. The word speaks to the hunger for living space in a hyper-dense environment, as well as the desire to satisfy that hunger by any means possible, whether by proper planning and tactics or through trickery and obfuscation. It touches both the rich and the poor, the white-collar and the blue-collar, as they navigate their lives together in and around the urban fabric. Upon reading my comment in that article that without a doubt it is FAR that drives the architectural character of Korean cities, a renowned urban researcher told me I had hit the nail right on the head.

On seeing that Alejandro Aravena proposed the theme “Reporting from the Front” for this year’s Venice Biennale, my immediate thought was that the play of the FAR Game was the real battle being waged on Korea’s architectural front lines. The fact is that 99% of Korean architects must play the game in order to survive. An architect rarely gets a commission unless they can convince clients that their design proposal has larger rentable floor areas than their competitor’s.

In Korea, most clients and land owners are paying for the invisible quantity of the building, not the visible quality of the architecture. Buildings themselves are often not valued in the real estate market. The average lifespan of a building is shorter than that of a human being. If a new building can stack that land better, leading to an increase in FAR, then demolition and reconstruction are sought. It is not uncommon to see celebratory banners when a building fails its structural stability test, because it means the demolition will be approved.

The FAR Game is particularly relevant to South Korea due to its recent history of unprecedented economic growth. In 1962, when the first Building Act and Urban Planning Act were established, South Korea’s GDP per capita was [less than \\$100 USD](#). Over the next 50 years it grew more than 300 times while land prices multiplied more than 600 times. This led to “compressed growth”

and hyper-density in the country's urban industrial hubs, with the Greater Seoul Metropolitan Area being the prime example. Combined with plot-based building regulations and an irregular and heterogeneous urban grain, Korean urban architecture has not been able to escape from the desperate and complex drive to augment living space that characterizes the FAR Game.

It is true that a clear identity for Korean architecture has been blurred amid the struggle between conflicting agendas: demolition vs. regeneration, privatization vs. nationalization, aesthetics vs. practicality. But underneath all of these considerations, the FAR Game always rages. It is easy to dismiss the FAR Game as a symptom of unscrupulous greed, and perhaps this is why theorists and critics rarely talk about it openly. However the reality is that, rather than resisting it, architects in Korea must welcome the tension between the desire for maximum floor area and the building rules that restrict it, and use that tension to spark creativity and innovation.

The FAR Game Exhibit at the Korean Pavilion is designed to track [the changes in the game after the global economic crisis of 2008](#), and highlight the best examples of creative responses to the demands of FAR. Our team of six curators have analyzed the data and have worked to enroll participants and select materials that will illustrate not only the harsh realities facing Korean architecture and cities, but also the ways that our industry is making small changes for a better life as Aravena proposes.

Before I applied for this curatorship I spoke with a close friend, who encouraged me to go ahead if I could enjoy the process and not get caught up with trying to impress people. This made me think of Paulo Coelho's modern vanity fair satire "The Winner Stands Alone," set at the Cannes Film Festival. The Venice Biennale itself could be perceived as a vanity fair for closed circles of people increasingly detached from the reality of everyday life. However, I choose to see it as a platform for different perspectives from otherwise unheard voices. I represent my country here not to seek recognition, but to open a discussion with architectural professionals as well as the interested public about why the FAR Game matters in Korea and to architecture in general.

The FAR Game is a kind of self-portrait of Korea. Rooted in our past, it will continue to exert itself on the development of architecture in Korea well into the future. *A far game*, indeed.

The FAR Game: Constraints Sparking Creativity

The front line of the architectural battles waged in Korea inexorably runs through its capital city of Seoul. Korean architects may think they have the vision of field generals, but when handling their missions in Seoul, they are often asked to operate more like foot soldiers.

The Korean urban architect works under the constant pressure of two opposing forces. One comes from Seoul's hyper-density; the greater Seoul metropolitan area, representing 12% of South Korea's land mass, is home to nearly half of the citizens of the entire country. Hence plot prices are at a premium, and the architect is always under strict orders to augment useable floor area in order to maximize a developer's and land owner's profits. The other is an urban building regulatory system where strict and unyielding rules give public officials little discretion for negotiation.

Korean architects must therefore always be prepared to perform a high-wire balancing act. Their endeavor to deal optimally with these opposing forces in the planning and execution of their buildings is known euphemistically as 'playing the FAR Game'.

Facing this tug-of-war between private profit and public regulation, how is the Korean architect truly to ply his trade, and infuse his work with some form of aesthetic or socio-cultural considerations? The answer from today's Korean architects, evidenced by the 36 buildings showcased in this exhibit, is to use the constraints brought on by the FAR game to spark their creativity rather than allowing those constraints to stifle it.

The target is medium-scale multi-family houses or mixed-use buildings, which in earlier times would not have been on the radar of most architects. Yet, as this exhibit will show, these projects are now providing fertile grounds for creative responses to the intense high-stakes pressures of the FAR game.

By Sung Hong KIM, Eungee CINN, Keehyun AHN, Seungbum KIM, Isak CHUNG, Da Eun JEONG, Richard Enos

The FAR Game: Constraints Sparking Creativity

Layout of Exhibits

1. What are the Rules of the Game?

- 1.1 The FAR Game Defined
- 1.2 The Players
- 1.3 Playing the Game in Korea

2. How is the FAR Game played?

- 2.1 Stereotypical Medium Multifamily House
- 2.2 The FAR Game in 36 Buildings
- 2.3 Design Tactics
- 2.4 Tetris House: Prime Example
- 2.5 Urban Contexts of the 36 Buildings

3. What are the Forces at Play in the FAR Game?

- 3.1 Hyper-density
- 3.2 Land Price
- 3.3 Capital Concentration
- 3.4 Building Scales and Typologies
- 3.5 The FAR Game in Statistics
- 3.6 Characteristics of the Urban Fabric

4. Artist Perspectives on the FAR Game

Artists' drawings, photographs, and videos span the cityscape and bring its built structures into view, individually and collectively, to expose the scars of FAR Game battles won and lost.

5. Why Does the FAR Game Matter?

The relevance, significance and implication of the close look at the changes in the FAR Game in Korea after the global economic crisis of 2008 are summarized as three statements

.

1. What are the Rules of the Game?

1.1 The FAR Game Defined

Any and all architectural projects in Seoul, whether large-scale demolition and reconstruction projects or piecemeal regeneration, first have to consider the viability and the return-on-investment (ROI) for the land owner and developer. The unparalleled migration to the capital city in recent history and the ensuing high demand for living and working space led to a rapid rise in the cost of land.

As a consequence, it is natural that land owners and developers would urgently seek to maximize the useable floor space in the buildings that will be constructed for them in relation to the actual size of the land plot. In architectural terms, the relationship between these two values is known as Floor Area Ratio (FAR). The endeavor to maximize this ratio at all costs, within the confines of strict building regulations, is known in Korea as *the FAR Game*.

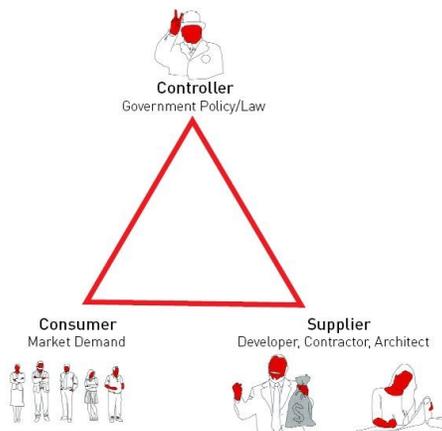


[Another diagram]

Building sections in red indicate how building volumes and spaces are extended outward within the city.

1.2 The Players

The FAR Game consists in the interactions of three players: the consumer demanding suitable living/working space, the supplier attempting to deliver it through maximizing floor area, and the controller restricting it based on the dictates of urban building rules.



The Players of the FAR Game

While the intensification, amplification and verticalization of buildings that came as a result of the mass migration to Seoul had been a boon for the construction industry, it left architects with few voluntary decisions in their building designs. Developers and contractors had the challenge of rising land prices that directly impacted their ROI, and more and more they began to dictate design elements to the architects that would maximize a building's floor area. In other words, it was really the developers and contractors, not the architects, who first took the initiative in the FAR game.

After the financial crisis of 2008, however, both direct consumers (land owners) and indirect consumers (potential buyers, tenants) began to sense the decay of the 'real estate myth,' the idea prevalent in Korea for the preceding 50 years that growth in the housing market would go on forever. Controllers—government institutions that are supposed to stand for the public good—began to notice signs of economic uncertainty in large-scale development and redevelopment, and consequently turned their attention to piecemeal renewal and regeneration.

A demographic transition in Korea—caused by declining birth rates, a decrease in population, an increase in the number of single households, and an increase in the number of

elderly—forced a restructuring of typologies in the urban architecture. The younger generation kindled a desire to live in the inner city and enjoy a new urban culture, causing an increase in the demand for affordable small-scale residential and retail spaces.

One of the consequences of this rising demand was an emerging new role for architects in the small and medium scale building market. Previously, these buildings were essentially designed and executed by the developers, following standard building code, with little or no input from actual architects. The projects were considered too small, and paying commission to an architect was seen as reducing ROI without providing any tangible benefits.

After 2008, however, land owners started awakening to the possibility that if they did hire architects for their design ingenuity, they could increase and ameliorate the useable floor area, and would attract better tenants and be able to solicit higher rent. This is how architects in Korea began to become players in the FAR game.

1.3 Playing the Game in Korea

Step 1: Calculate FAR (and BCR)

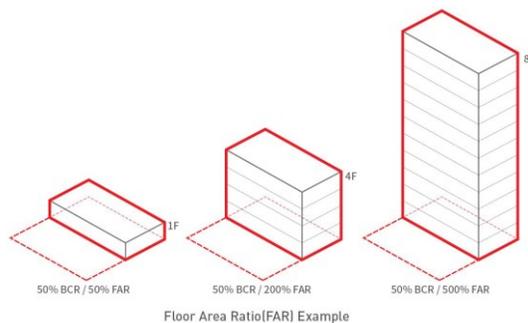
The Korean word for Floor Area Ratio is yong-jeong-nyul (용적률, 容積率), which actually means 'volume ratio,' and not 'area ratio.' Thus, there is some discrepancy between the definition of FAR in theory and its application in practice. Between the planes of two-dimensional surfaces and three-dimensional volumes is where the FAR Game is really played. So while FAR is calculated this way,

$$\text{FAR} = \text{gross floor area} / \text{plot area} \times 100$$

the FAR game involves design strategies to increase not only floor area but also volume. In order to do this, not only is the Floor Area Ratio considered, but another metric as well called the Building Coverage Ratio (BCR). BCR represents the relationship of the built area to plot area, and is calculated as follows:

$$\text{BCR} = \text{built area of a building} / \text{plot area} \times 100$$

The built area is defined as the footprint of a building projected from 1m above the ground level.



Relationship between plot, BCR and FAR

In the diagram we see a one-story building that occupies half the plot. Hence the building's FAR would be 50% and its BCR would also be 50%. If the building was 4 stories high the FAR would be 200%, and 10 stories high would make the FAR 500%. The BCR remains the same for all three buildings.

The actual limits imposed by the government vary based on the zoning of the region the

architects are building in. Note the chart below:

FAR and BCR Limits in Seoul by Zoning Designation

Zoning	Sub-categories	Portion of Seoul land area (%)	FAR Limit (%)	BCR Limit (%)
Residential	Exclusive Residential	1.0	100~120	40~50
	General Residential Class-1	10.8	150	60
	General Residential Class-2	22.2	200	60
	General Residential Class-3	14.8	250	50
	Quasi-Residential	1.6	400	60
Commercial		4.1	600~1,000	60
Industrial		4.6	200~400	60
Green		40.9	50	20

Urban Planning Municipal Ordinance, Seoul Metropolitan Government

Step 2: Create the Building Envelope

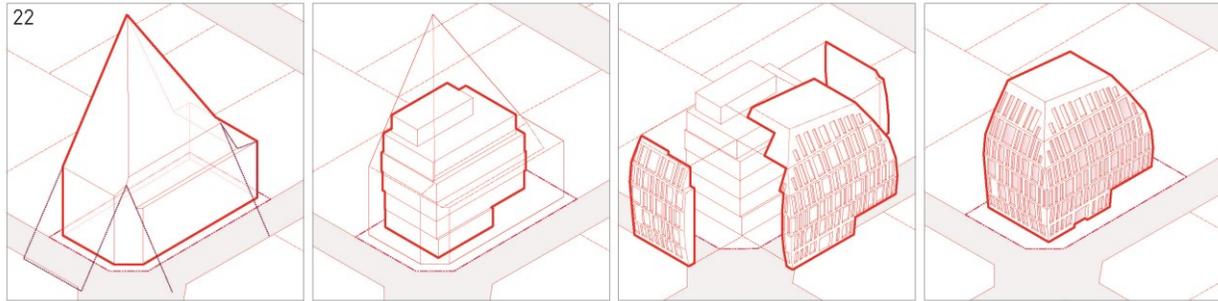
The next step for architects is establishing a hypothetical ‘building envelope’, which is a three-dimensional figure that encapsulates the shape of the maximal area the building can legally occupy, measured by floor area, storey height and number of stories.

To properly create the building envelope, the architect has to factor in the five most critical regulations:

- minimum distances from the site boundary
- street width diagonal plane control (abolished in 2015)
- north-south orientation setback and diagonal plane control
- maximum height and number of floors (for multifamily housing and for areas regulated by the 2002 District Unit Plan)
- required number of parking spots in relation to floor area

Step 5: Extend the Building Envelope with Formal and Configurational Innovations

In order to maximize rentable space and minimize un-rentable space, architects need to be masters in formal and configurational innovation, and sometimes outright invention.



Four diagrams outlining how the FAR game is played

Diagram 1 (Steps 1-3): A hypothetical building envelope, regulated by the limits of urban building regulations

Diagram 2 (Step 4): A hypothetical building mass, accommodating the specific functions required by clients without losing floor area within the envelope

Diagram 3 (Step 5): The extended volumes or surfaces developed through formal and configurational innovations

Diagram 4: The realized building

2. How is the FAR Game Played?

2.1 Stereotypical Medium Multifamily House

In residential zoning areas in Seoul between the 1980s and 2000s, many one and two-story single-family detached houses were replaced by three and four story multi-family houses. This including both *dagagu jutaek* (rental properties) and *dasedae jutaek* (properties for sale) that were no more than 660 square meters and 19 units. They were gradually mixed with *keunsaeng* (small retail spaces) on the ground floor.

Traditionally, these structures were designed on purely pragmatic grounds by local builders and developers without any professional design training. The compactness of the buildings, together with narrow adjacent roads and an insufficient parking area, makes these buildings undesirable living spaces.

Naturally they were not favored by the upper middle class, who wanted to own the more profitable apartment unit. If the real estate speculation and construction boom lasted, these structures would have been replaced by high-rise apartment complexes or commercial buildings.

Instead, smaller-scale redevelopment has become predominant, allowing young architects to enter this tough market after 2010. Our exhibition demonstrates how they play the FAR Game in a way that differs from the purely pragmatic focus of local builders and developers.



Stereotypical Medium Multifamily House (Scale 1/20)

[Image Heading]

Korea has been criticized by outsiders as the ‘Apartment Republic,’ but more households still live in medium-rise multifamily houses than in high-rise apartment buildings.

[New Diagram]

Profiles of the Main Residential Building Typologies in Seoul

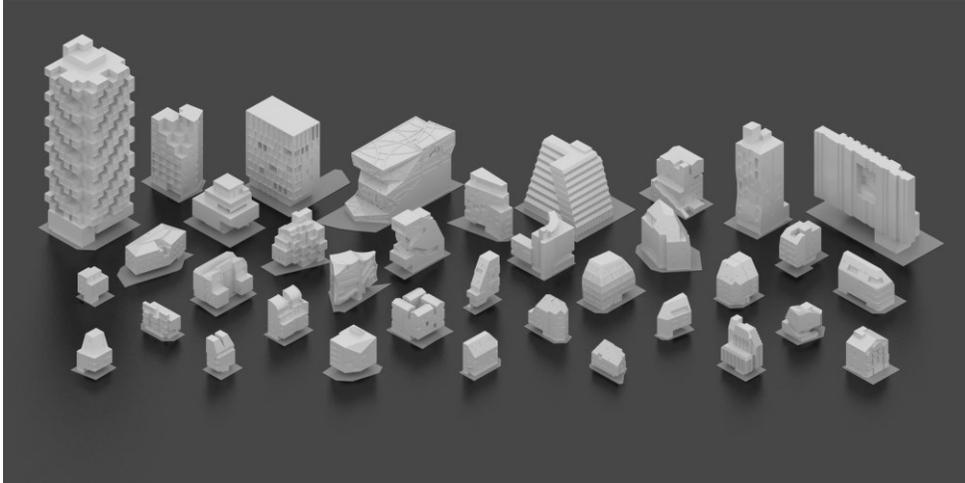
This graphic shows the profiles and the number of households that live in each of the four main residential building typologies.

In 2015, the total gross floor area (GFA) of high-rise apartment buildings comprised 61% of the GFA of all residential buildings, while multi-family houses accounted for only 24%. But when it comes to number of households, it is a different picture: 1.66 million households (46.1%) live in multi-family houses, whereas only 1.61 million households (44.8%) live in apartment buildings.

The average size of a multi-family house is 354 m² and 2.9 storeys, where an average of 8.3 households occupy a living space of 43 m². By contrast, the average apartment building is 7,202 m² and 9.5 storeys, where an average of 63.1 households occupy a living space of 114 m².

Most multifamily houses will have to face some form of regeneration by 2020 according to urban planning guidelines and requirements for Seoul.

2.2 The FAR Game in 36 buildings



The 36 buildings selected are each represented by two models. One is a hypothetical building mass accommodating the specific functions required by clients without losing floor area within the envelope, the other is the realized building. All 72 models in the exhibition room are built to the same scale, 1/75.

The 36 buildings chosen represent a cross-section of the typical urban architecture in Korean cities, using Seoul as the core. These buildings exemplify the unique vision of Korean architects seeking to maximize FAR while providing a sense of spaciousness and freedom. The geometrical and compositional inventiveness gives an ever-densifying city a distinct identity. This is part of an urban culture which creatively absorbs the daunting population magnetism of Seoul and turns it into an advantage.

Year of Construction: All 36 buildings were built after 2010.

Location: 34 buildings are in the Greater Metropolitan Seoul Area, with 29 in the city of Seoul proper. The other 2 are in Busan, the second largest city in Korea.

Size: With the exception of the five largest buildings, the average gross floor area for the exhibit buildings is 747 m². They average 6 stories with one underground floor. The average plot size is 292 m². The average FAR is 201%. These figures reflect the averages for urban architecture and plots in Seoul.

Program: The functional program of 23 of the buildings is residential, or a mix of residential and retail. They represent the typical urban architecture in Seoul.

Zoning: 24 buildings were built within urban areas formulated by the predominant urban planning tool, Land Readjustment (LR), in the 1960s and 1970s. The majority were built in General Residential zoning, and represent the typical residential areas in Seoul.

Architects: All of these buildings were designed by architects from small studios. Many are just starting out within the Korean architectural community. Some of them feel they are still in the minor leagues when it comes to designing more stratified structures. Hence, being knowledgeable about and skillful at the FAR Game is not only desirable for these architects, it is a prerequisite for their survival.

2.3 Design Tactics

The FAR Game confronts and challenges some of the basic principles and elements of architecture. It imposes itself not only on the scale of a building but also on the organization of fundamental elements of a building—plan, volume, and section. The architect must develop tactics to address each of these elements in order to fulfill the demand for maximum floor area and volume. Most of the 36 buildings exemplify several of the following design tactics.

Planimetric Tactics: Refers to efforts to make the most out of every square meter of usable floor area regulated by BCR and FAR limits, by reducing common areas such corridors and nooks while expanding rentable areas. The shape, width and depth of floor plans are carefully adjusted and squeezed to fit inside the horizontal perimeter. The balcony, penthouse, and courtyard, which are exempt from the FAR calculation, are added or augmented.

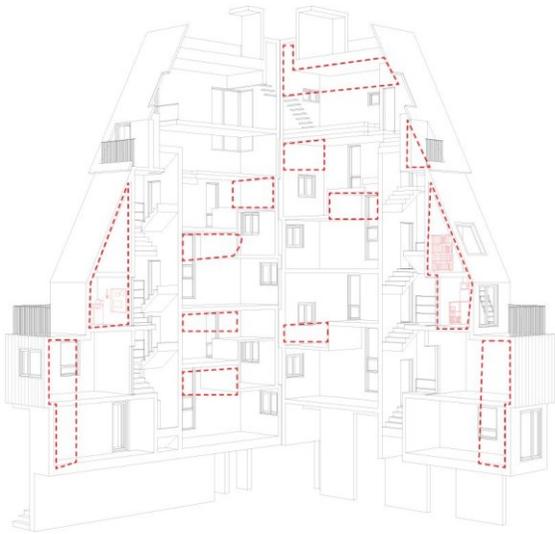
Volumetric Tactics: The practice of shifting focus from two dimensional floor areas to three dimensional volumes. After fully obtaining the floor area, an architect extends volumes, usually employing irregular polygonal shapes, to reach the limits of hypothetical planes determined by the building regulations. Layers of perforated building surfaces, sometimes using improvised formal shapes, are attached.

Sectional Tactics: Architects reduce the ceiling height in order to be able to add one or more storeys within the overall height of the building envelope. While a standard ceiling height in modern Korean residential buildings is 8', a reduction of 10% is often enough to be able to add one more floor to make a five storey building. Where clients prefer an increase in the height of their building rather than in its width, an architect increases the number of storeys on the top, and reduces the corresponding amount of floor area in the middle, similar to slimming the waistline of a body. The underground floors and the attic, which are not included in the FAR calculation, are also designed as livable and rentable areas. It is like solving a three dimensional puzzle.

2.4 Tetris House: Prime Example



The scale of model is equal to the stereotypical medium multifamily house at Section 2.1.



[More Description will be added]

2.5 Urban Context of the 36 Buildings

These aerial photos show the urban context of each of the 36 buildings. Each area is 300 x 300 meters, and the scale is 1:1000. The building with the background urban scenes were captured by artist Kyungsub SHIN

3. What are the Forces at Play in the FAR Game?

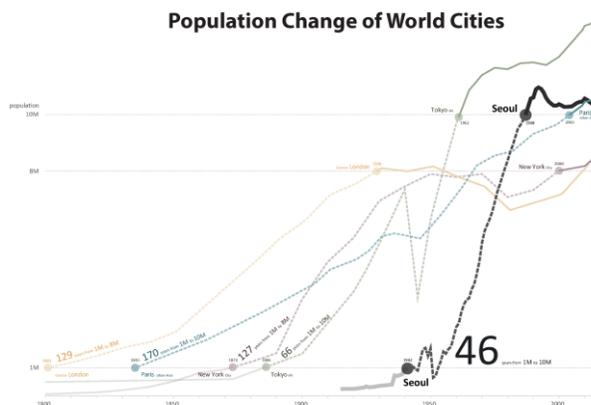
3.1 Hyper-density

After the Korean War, the capital city of Seoul became the uncontested center of industrial development, and as a consequence the population of the city took off. Seoul's population was 1.6 million in 1955, 3.5 million in 1965, 8.4 million in 1980, and over 10 million by 1990. Over the course of 35 years, Seoul's population grew more than 6 times, while South Korea's population merely doubled.

It took only 46 years for Seoul's population to reach 10 million from 1 million. Compare that with London, which went from 1 million to 8 million in 150 years, or New York City which took 170 years to accomplish the same feat.

[Image Heading]

It took only 46 years for Seoul's population to go from 1 million to 10 million.



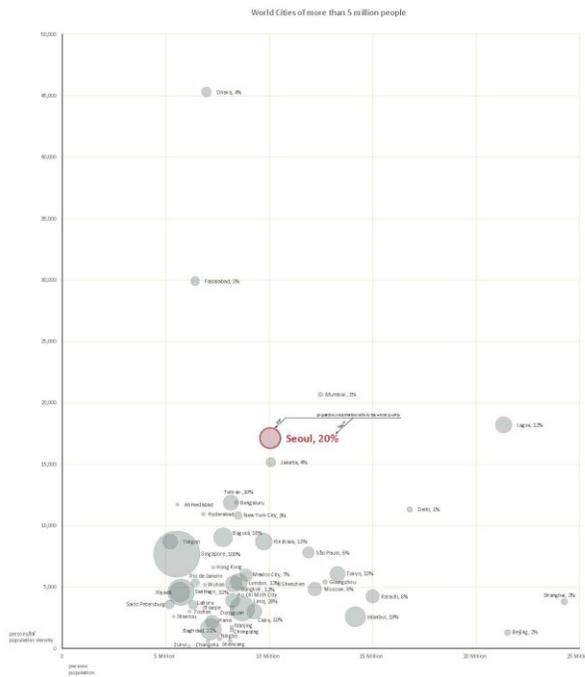
Population Growth of Seoul and Other Large World Cities

x-axis: year

y-axis: population (number of inhabitants)

[Image Heading]

Seoul is one of the most populated, densest, and most concentrated cities in the world.



Population, Density, and Concentration Ratio of Seoul and Other Large World Cities

x-axis: population (number of inhabitants)

y-axis: density (number of inhabitants per square kilometer)

Size of circles: concentration ratio of capital city to nation

Seoul is found in the upper right part of the graph with cities such as Mumbai, Delhi and Jakarta, making Seoul one of the most populated, densest, and most concentrated cities in the world. Half of the population of South Korea resides in the Greater Seoul Metropolitan Area, with about half of that, or over 10 million people, living in the capital city proper.

As a consequence, Seoul’s housing construction could not keep up with the accelerated demand for more physical living space. An urban planner calculated that, between 1960 and 1980, about 800 people moved into Seoul every twenty-four hours, meaning that on average a 20-story apartment had to be built each day.

3.2 Land Price

[Heading]

Seoul's total land price represents about 30% of the total price of land of the whole of South Korea.



Land Price Growth in Seoul and South Korea

x-axis: Year

y-axis: Land Value (in billions of US dollars)

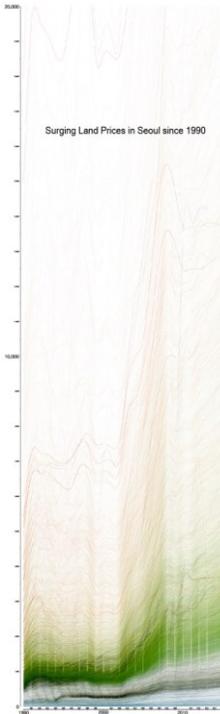
Between 1964 and 2015, the official total land price of South Korea grew more than 680 times. If that price is calculated in Korean Won, it grew more than 3,000 times. A more striking fact is that Seoul's total land price represents about 30% of the total land price of the whole of South Korea.

The real transaction prices of land are higher than the official prices, sometimes double in Seoul. In 2015, a plot in a prime location of downtown Seoul reached \$80,000 USD per square meter.

It is no wonder that developers and clients pursue the maximum FAR relentlessly to compensate for the rising land acquisition prices.

[Heading]

Seoul's land prices dramatically grew between the 1997 Foreign Exchange Crisis in Korea and the 2008 Global Financial Crisis.



Changes in Land Price in Seoul, 1990-2015

x-axis: year

y-axis: land price per square meter (in US dollars)

Colors indicate different zoning areas: blue for Green Zoning, green for Residential Zoning, orange for Commercial Zoning, black for roads.

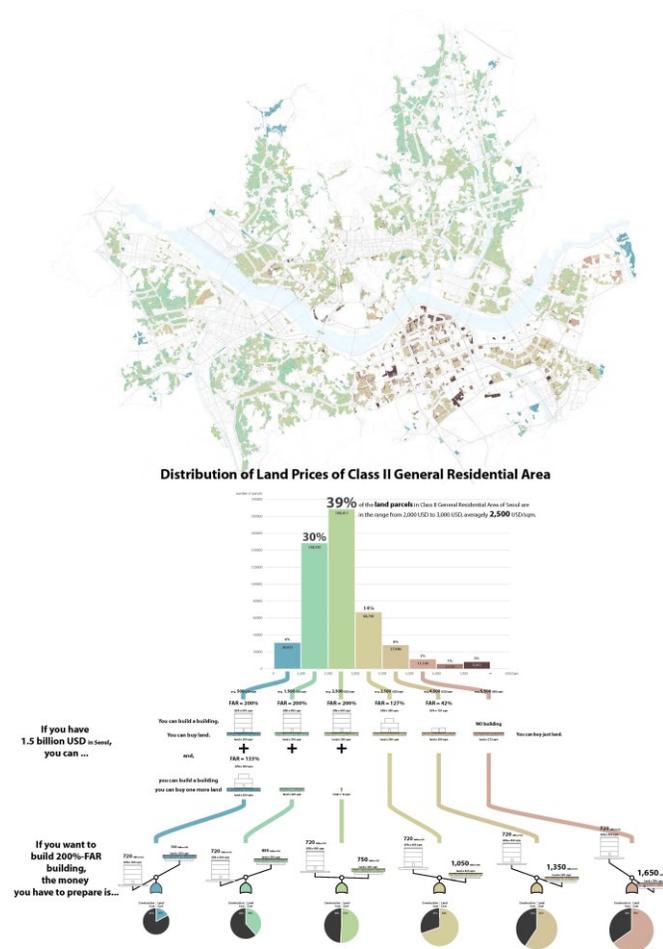
The data is from an analysis of 50,000 representative plots in Seoul.

[Heading]

In Seoul a building is considered as the stacking of land.

The land price determines the success or failure of a development. On the average, the land price consists of more than half of the total construction cost in Seoul. The building is often not valued in the sale of a property.

Ultimately, floor area is the land, verticalized. In Seoul, land is money, and hence so are floor areas.



Land Prices of General Class-2 Residential Areas in Seoul (top)

The General Class-2 Residential areas comprise almost a quarter of the city, and so are considered the prototypical urban spaces in Seoul. These areas are mostly deep inside blocks adjacent to narrow secondary roads. Colors indicate the ranges of values. The most expensive plots are concentrated in Gangnam, South of the Han River.

Distribution of Land Prices in Seoul (upper)

x-axis: price per square meter

y-axis: number of plots

About 39% of the plots in General Class-2 Residential Zoning Areas are priced at about \$2,500 USD per square meter. They occupy the largest portion. The official land price of the top 5% of the plots is more than \$5,000 USD per square meter.

Land Prices and Building Feasibility in General Class-2 Residential Areas in Seoul (lower)

The diagrams show the size of land and building you can purchase in Seoul if you have \$1.5 billion USD.

For example, if a developer chooses a plot costing \$2,500 USD per square meter, he can buy 300 square meters and construct a building with a maximum 200% FAR. But if he chooses a plot of \$5,500 USD, he will end up buying just 273 square meters of land with no building.

Ratio of Land Price to Total Construction Cost in General Class-2 Residential Areas in Seoul (bottom)

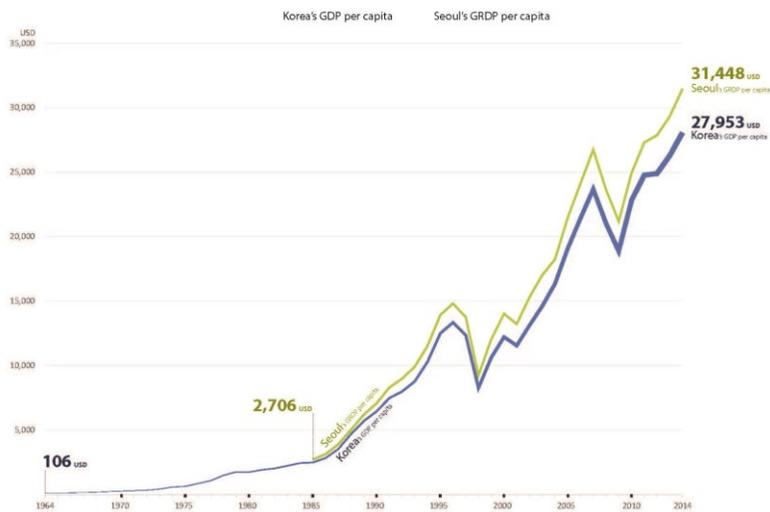
The diagram shows the ratio of land price to the total construction cost, provided you construct a building with a maximum 200% FAR on 300 square meters of land. For 64% of the plots in General Class-2 Residential areas, the land price comprises more than half of the total construction cost. For 25% of the plots, the ratio is 60%.

3.3 Capital Concentration

In 1964 South Korea's was one of the poorest countries in the world with a GDP per capita of \$106. By 2014, Korea's GDP per capita had reached \$27,953 USD. Seoul led the expansion and concentration of capital. Seoul's GDP per capita in 1985 was \$2,706 USD, and it reached \$31,448 USD in 2014.

[Heading]

Economic growth and capital concentration accelerated the Far Game in Seoul



Growth of GDP per capita in Korea and Seoul, 1964-2014

x-axis: year

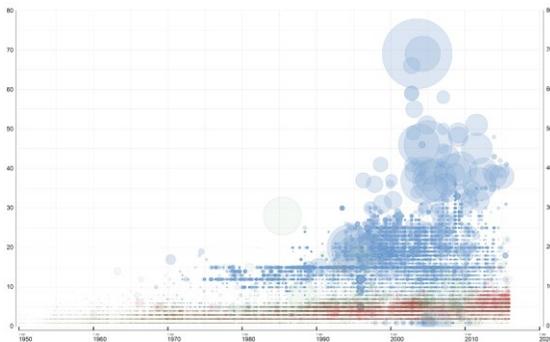
y-axis: GDP per capita

3.4 Building Scales and Typologies

Amidst amplification and verticalization of the urban architecture, building scales and typologies were differentiated and polarized. These changes were most drastic between Korea's foreign exchange crisis in 1997 and the global financial crisis in 2008.

[Heading]

Building typologies were polarized drastically after Korea's 1997 foreign exchange crisis.



Amplification and Verticalization of Buildings and Polarization of Typologies in Seoul

About 600,000 buildings out of the total 640,000 buildings in Seoul were analyzed for this graph and diagram.

x-axis: building completion year

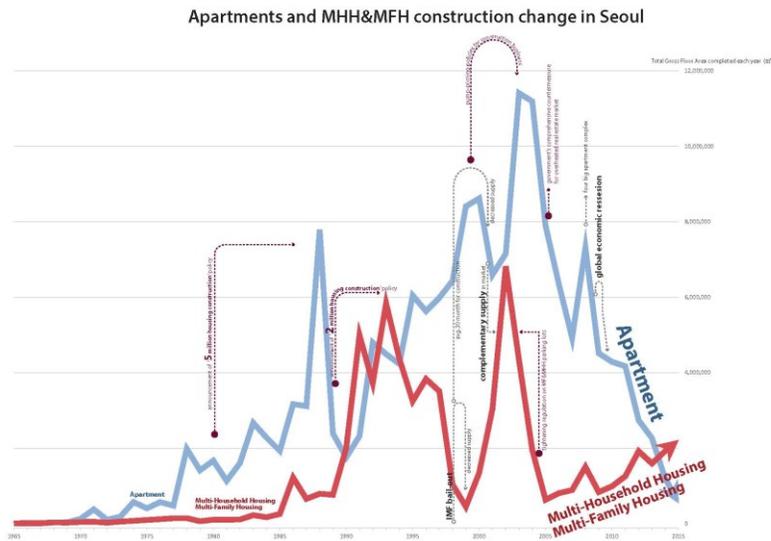
y-axis: building storeys (height)

Size of circle: relativized gross floor area of each building

Colors indicate the different building types. Blue indicates high-rise apartment buildings, red multi-family houses, and green small retail buildings. The larger apartment buildings in the upper part of the graph became clearly distinguished from the smaller multi-family houses and retail buildings.

[Heading]

In 2015, construction of multi-family houses exceeded the construction of apartment buildings for the first time since the 1970s.



Changes in the Construction of Multi-family Houses and Apartment Buildings

x-axis: year

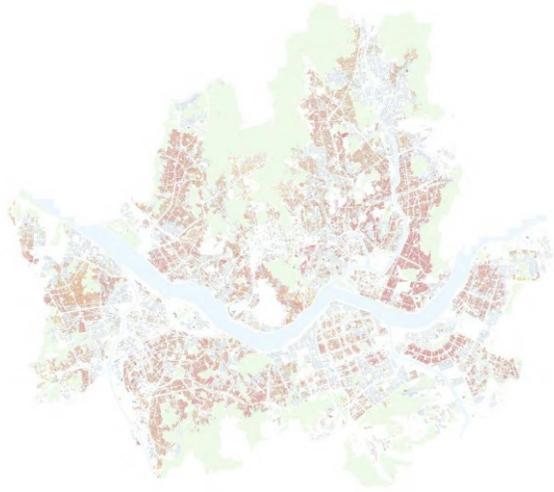
y-axis: Total gross floor area constructed that year

The blue indicates apartment buildings and the red the multi-family houses.

Amid fluctuation in the construction of the two major residential building types since the 1990s, the supply of apartment buildings has exceeded that of multi-family houses for the last 20 years. However, as the economic profits of large-scale apartment development were no longer guaranteed after 2008, the construction of apartment buildings dropped rapidly, while that of multi-family houses continued to increase. As of 2015, the supply of these two types reversed, which is a new phenomenon in the history of residential buildings in Korea.

[Heading]

Multi-family houses mixed with small retail spaces are dispersed across the city of Seoul

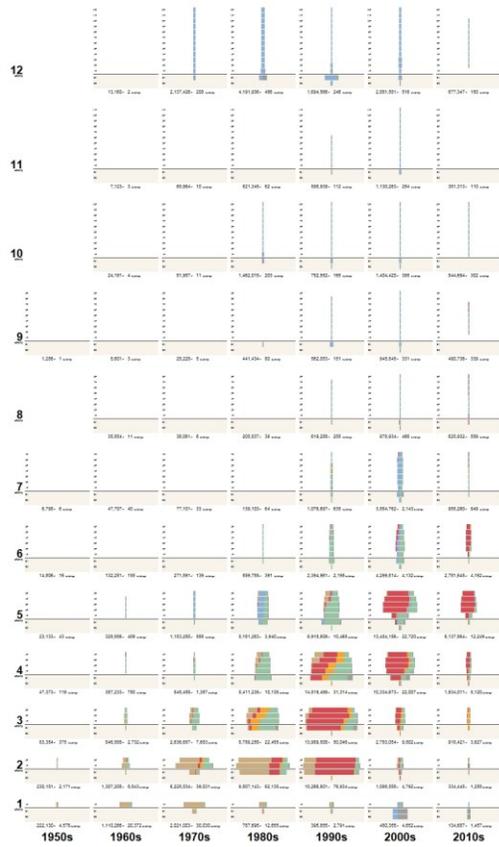


Distribution of Residential and Small Retail Spaces in Seoul

Colors indicate the different space programs: brown indicates single detached houses, red multi-family houses, blue apartment buildings, orange other miscellaneous residential spaces, and green retail spaces (keunsaeng).

[Heading]

While the two major building types—the apartment building and the multi-family house—were polarized from the 1980s, small retail spaces (keunsaeng) were combined with the medium-rise multi-family houses, and became the prototypical mixed-use buildings in Seoul.



Profiles of All Residential and Small Retail Buildings in Seoul

x-axis: period (10 years interval)

y-axis: number of storeys

Width: the total aggregated amount of floor area

Colors indicate the different space programs: brown indicates single detached houses, red multi-family houses, blue apartment buildings, orange other miscellaneous residential spaces, and green retail spaces (keunsaeng)

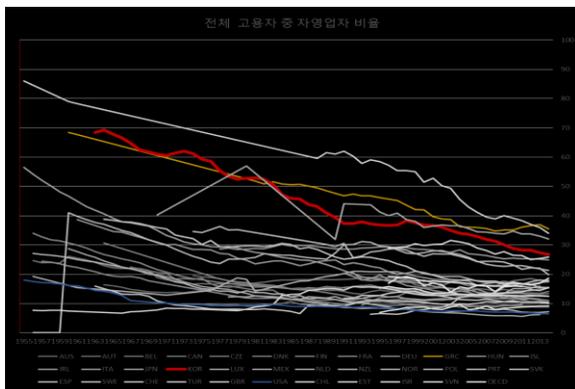
Thus the building profile in each section represents the number of storeys (height), the total amount of floor area, and space programs of all buildings constructed in each period. The number on the left indicates the total gross floor area and the one on the right the total number of buildings.

[Heading]

The higher ratio of self-employed in Korea affects the retailization of medium multi-family houses.

The mixture of residential and retail spaces within Residential Zoning areas is common in Korean cities. It is because urban and building rules allow most retail functions in Residential Zoning. But the fundamental reason for this phenomenon is the higher ratio of self-employed.

In 2014, the ratio of self-employed in Korea was 26.8%, the 4th highest behind Greece (35.4%), Turkey (34.0), and Mexico (32.1%) among OECD member countries. Between 2013 and 2014, the average of all OECD member countries was between 16.3% and 17.1%.



[This line graph will be substituted by a bar graph.]

Ratio of Self-Employed for the 28 OECD Countries

x-axis: 28 OECD countries

y-axis: ratio of self-employed

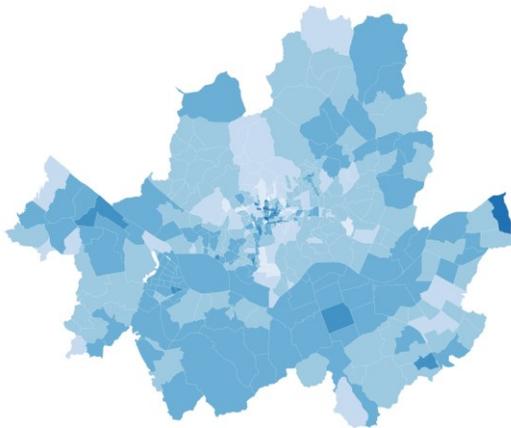
3.5 The FAR Game in Statistics

Today, the average FAR of about 600,000 of the 640,000 buildings in Seoul is 145%. Based on regulations, these buildings would be permitted to reach an average FAR of 208%.

The discrepancy between the current FAR and buildable FAR puts pressure on developers and architects, as a 200% FAR ratio is considered the minimum threshold for new development.

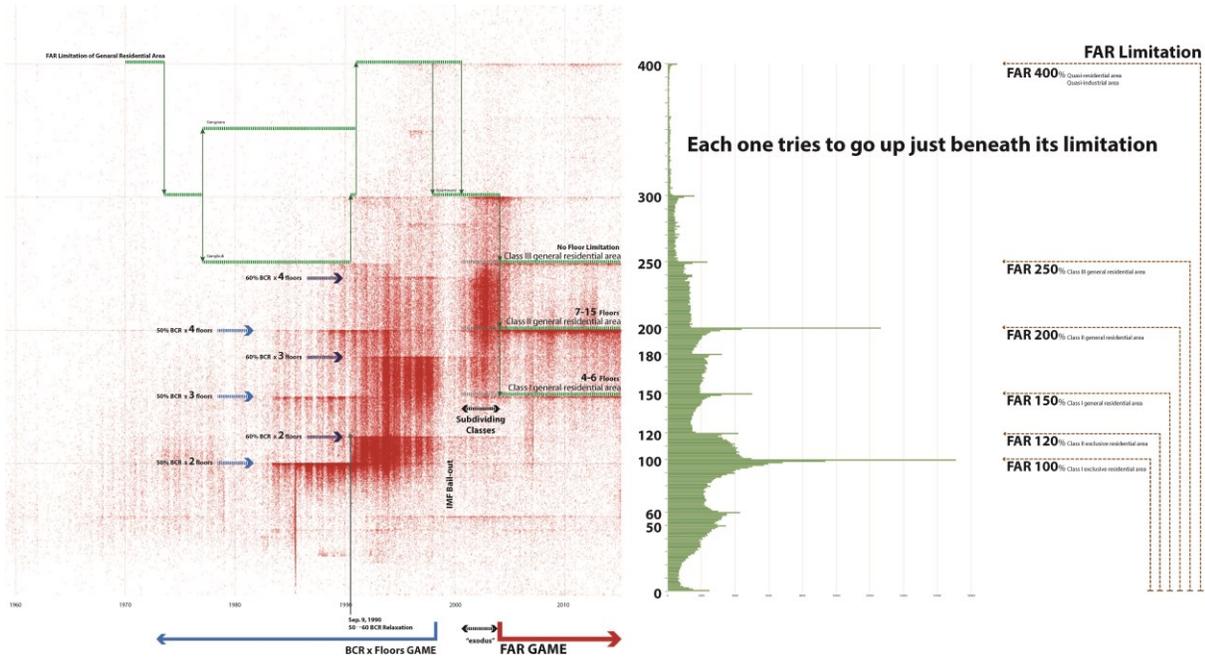
[Heading]

The gap between the current average FAR and buildable FAR drives the FAR Game.



[Heading]

These two infographics demonstrate how the FAR Game is played in direct response to changes in the urban building rules.



The FAR of 94% of All Buildings in Seoul

The Diagram on the left

x-axis: period (10 year interval)

y-axis: FAR

Dots represent 600,000 of the 640,000 buildings in Seoul.

The Diagram on the right

x-axis: the total number of buildings (about 600,000)

y-axis: FAR

Dots represent 600,000 of the 640,000 buildings in Seoul.

The infographic on the left shows the stepwise distribution of FAR with some intervals. The distribution of FAR is clearly demarcated into three different periods – before 1997, between 1998 and 2003, and after 2003. These were the years when the regulations regarding FAR limits were revised.

On the right infographic the two highest peaks are shown at 100% and 200%, which are the maximum FAR regulated in different zoning areas. These demonstrate how the FAR Game really is a concerted effort to capture every possible millimeter of space allowable.

3.6 Characteristics of the Urban Fabric

The Superblock

Gangnam, South of the Han River, approximates the typical urban grid pattern in Seoul today. Gangnam is the single largest area (2,688 ha) to undergo Land Readjustment (LR) in Korea, and it has become the new commercial and business center while supporting upscale residential areas.

Land Readjustment is an urban planning tool used to consolidate disparate and fragmented land parcels into contiguous tracts, while building public infrastructure that included roads, parks, rivers, and sites for public buildings. Nearly 40% of the urbanized area in Seoul was organized by this urban planning tool. Among the 36 buildings showcased in this exhibit, 24 were built in LR project areas.

Because this area was modeled under a comprehensive plan, the grid pattern of streets, blocks, and plots is quite functional, unlike irregular and discontinuous old areas in Seoul. As a consequence they remained relatively untouched by the subsequent planning tools.

If a block is defined as the area surround by roads that have separate driveways and a pedestrian sidewalk, Gangnam consists of superblocks and layers of smaller sub-blocks surrounded by undivided roads or narrow alleys. The block chosen as an example here is 850 by 750 meters.

[Heading]

Gangnam is representative of a planned grid pattern consisting of superblocks.



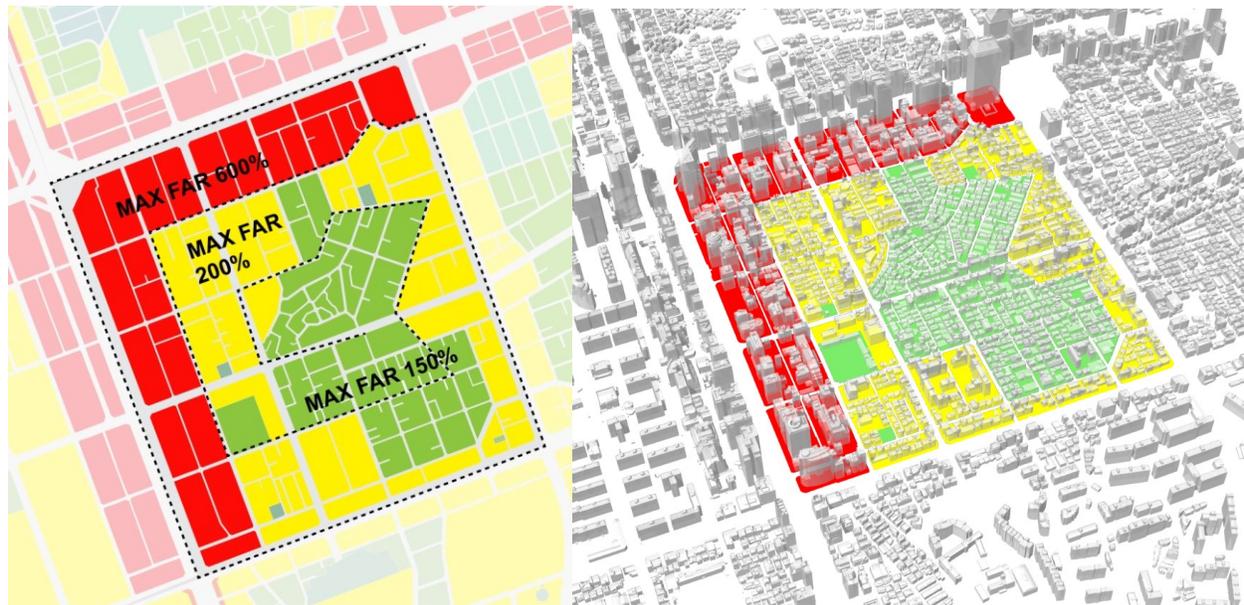
Zoning Layers in the Superblock

The superblock consists of more than two zoning areas. The perimeter of the block is bordered by either Commercial or Quasi-Residential areas in a linear pattern, while the inner blocks are divided into General Class-3, Class-2, or Class-1 Residential areas. Each zoning area has different FAR and BCR limits.

The superblock between Gangnam Metro Station and Yeoksam Metro Station consists of Commercial, General Class-2 Residential, and General Class-1 Residential zoning areas. The General Residential areas within secondary roads were planned for single detached houses by LR projects in the 1970s.

[Heading]

This horizontal shift of zoning within a block can be compared to the layers of an onion. Entering a block is like peeling a layer off; you see more onion, but the onion is getting smaller.



A bird's-eye view of zoning layers within a Gangnam superblock

Along the wide street, a new business corridor with high-rise office buildings is formed, while the areas in the middle were packed with medium rise residential and commercial buildings, converted from single story houses from the 1970s.

[Heading]

Drastic changes in verticality going from the wide perimeter roads to secondary streets, and finally to narrow alleys within a superblock in Seoul.



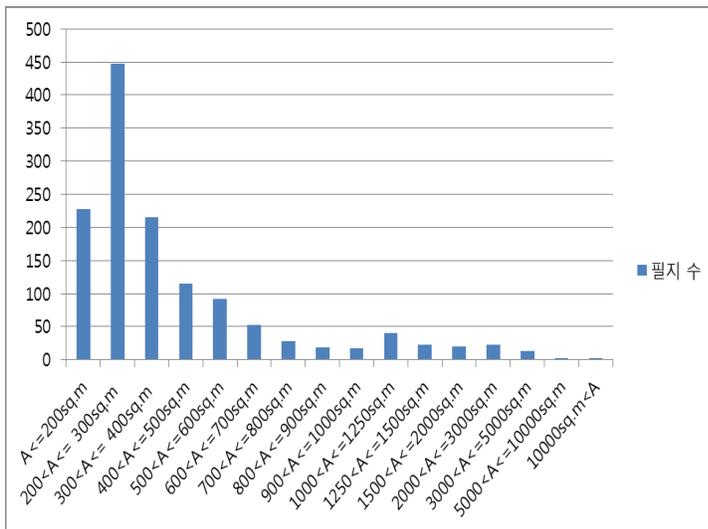
The unfurled dash-line 'spiral' from the previous diagram of the Gangnam superblock gives a visual sense of the FAR reductions as one moves closer to the center of the block.

Sub-blocks and Plots

One superblock is divided into smaller sub-blocks, about 6 by 6 sub-blocks on the average, which are further divided into plots. The plots are adjacent with 4, 6, and 8 meter-wide streets depending to their location.

[Heading]

The average plot size in this Gangnam superblock approximates the average plot size in Seoul today.



The chosen superblock between Gangnam Station and Yeoksam Station consists of about 1,340 plots. More than one third of these plots are between 200 and 300 square meters, which approximates the average plot size within Seoul today. This is about three times the average residential unit size defined by the Korean Government.

Dense and Compact Urban Fabric with Buildings Side by Side

Typically, one building is built on each plot in LR project areas. Compare this with the planning of high-rise apartment buildings, where dozens can be assigned to a single plot. Due to the small plots, narrow adjacent roads, and the restrictive plot-based buildings rules discussed earlier, it is virtually unavoidable that seeking to reach BCR and FAR limits will create a dense and compact urban fabric with buildings side by side.

[Heading]

The small plots, narrow adjacent roads, and plot-based buildings rules make for a unique dense and compact urban fabric.



[Note: The manuscript for this exhibit is partly extracted and modified from the following texts. Footnotes are not indicated in the texts displayed in the exhibit space.]

Kim, S.H., "Housing Site Development and a Shift in Urban Architecture at Mok-dong in Seoul," *The Journal of Seoul Studies* (ISSN 1225-746X), Vol. 59, pp.125-162; Kim, S.H., "Changes in Urban Planning Policies and Urban Morphologies in Seoul, 1960s to 2000s," *Architectural Research, International Journal of the Architectural Institute of Korea* (ISSN 1229-6163), Vol. 15, No. 3(September 2013). pp.133-141; Kim, S.H., "The Paradox of Public Space in the Korean Metropolis," In Limin Hee, et. al. Eds, *Future Asian Space: Projecting the Urban Space of New East Asia*, Singapore: NUS Press, pp.31-40; Kim, S.H., "Korean Architects Standing in the Middle," In *New Horizon in Korean Architecture*, Seoul: USD Publication. Introduction, pp.6-11; Kim, S.H., "Megacity Network," In S.H. Kim & P.C. Schmal Eds., *Megacity Network: Contemporary Korean Architecture*, Berlin: Jovis, pp.42-59.

4. Artist Perspectives on the FAR Game

In this section, drawings, photographs, and videos span the cityscape and bring its built structures into view, [individually and collectively](#), to expose the scars of FAR Game battles won and lost. Each artist renders the vivid reality of the lived urban space from their own perspective, going beyond the analytical investigations held in board rooms and drafting rooms. This section puts a different face on the FAR Game, one which expresses the collective sentiments as well as collective desires of the citizens that inhabit the city.

Using fine calligraphic brushes, Seongeun KANG details the façades of multifamily houses, with a simple elegance that belies their banal designs. Star and flower patterns on the facades appear detached from the buildings, which exude [the compartmented functionality that is often a consequence of the FAR game played haphazardly](#). *Other's Home* captures the anonymity created by builders who don't fully take ownership of their craft, and reflects a form of unconscious thinking that still pervades [large swaths](#) of everyday life in the city.

Seungwoo BACK has photographed thousands of multifamily houses in Korea over the years. He often creates images that capture a tinge of the poverty that Koreans have tried to erase from their memories. While Seoul tries to measure up to the prestige other global cities, the awkward and disjoint appendages in these buildings mock such an endeavor, as they chronicle a disorganized and desperate search for additional living space. While the FAR game can result in the continuation of a cultural identity rooted in a difficult past, these photographs can serve as a clarion call to the next generation of Korean architects, who are tasked with reshaping the urban battleground to reflect the nation's [highest aspirations](#), even as they continue to be tethered to the reins of the FAR game.

Yeondoo JUNG's *Building Recollection* documents fragments of streetscapes in an aging urban neighborhood. Images of buildings composed of a series of photographs seem frozen at first, but upon closer observation the images crawl slowly across the screen, as if to emphasize the [plodding persistence of an impoverished identity](#). Monologues from residents reinforce the way residents identify with their homes, and in that way are also caught maintaining a [stagnant sense of self](#). Here the FAR game is a context for the accumulated memories of their lives, which follow in lock-step [the notion that desires for space and freedom will never fully be realized](#).

Kyungsub SHIN provides a macro view for each of the 36 buildings in the main exhibit with photographs from a distance, sometimes from the sky. While the backdrops to most of the buildings look fairly standardized and flat at first, a heterogeneous and chaotic fabric soon comes into view. More difficult is to actually discern the buildings designed by architects, those which purport to impose themselves positively on the cityscape. It underscores the breadth of the task ahead for today's architects, who mostly play the FAR Game one building at a time, hoping to slowly transform the identity of the city.

5. Why does the FAR Game Matter?

The relevance, significance and implication of the close look at the changes in the FAR Game in Korea after the global economic crisis of 2008 are summarized as three. The messages can be useful for other nations and cities that are experiencing the aftermath of massive development, redevelopment, and post-development.

1) **The FAR Game is a powerful lens** to understand the current frontiers of Korean society as expressed in physical environment at the scales of buildings, urban areas, and cities. It is an embedded physical DNA that reflects the psyche of contemporary Korean. It has both positive side - fervor and struggle and its flip side - greed and foul play. Therefore, it can be a useful tool to connect architecture to society, and to make a change society through architecture.

2) **The FAR Game can be design tactics** to creatively absorb hyper-density by crossing over from quantity to quality, and to turn short-term individual profit into long term public benefit. Architects can create designs that support economically more valuable spaces and better living conditions, at the same time tackle the intrinsic question, that is, the rich and diverse relation between architecture and city, and between private and public realms. Here architects demonstrate the possibility of such solutions.

3) **The FAR Game can be an alternative form of urban regeneration and to social dynamics.** The recent FAR Game provides an opportunity for smaller development agencies and young architects to enter into the urban architectural battle and begin to reshape it. It fosters a slow but resilient form of urban regeneration, one building and one plot at a time, as an alternative to massive demolition and reconstruction. More importantly, small-scale building activities encourage social dynamics in the increasingly polarized Post-expansionist Korea.