

Legacies of the South Korean Mass Housing Project

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Abstract

The mass housing policies of the South Korean developmental state during the second half of the 20th century managed to overturn the traditional preference for single-storey housing in less than one generation. The exponential growth of the GDP since 1961 occurred hand in hand with the consolidation of apartment complexes as the default element of city-making and as the default domestic setting. As a result, they today are the residential choice of more than 50% of the population of Seoul. Not only have housing estates addressed the chronic housing shortage present in the capital since the 1920s, but they have also been a key element in the fast urbanization of the country and in the formation of a new urban middle class. Nowadays, there are evidences that the socio-economic model which supported the emergence and generalization of mass housing estates in Seoul has changed, questioning the very durability of the model. The objectives of the article are twofold. Initially, it describes the particularities of the Korean mass housing policy, the reasons for its success despite being perceived as a failure in the West, and its shared characteristics with other East Asian developmental regimes. Secondly, it discusses its legacy, both in terms of the know-how that Korean construction companies are trying to export to developing countries, but also in terms of the consequences which the maintenance of this large built urban stock will hold in the near future.

Keywords

Mass housing in South Korea, developmental housing policy, diffusion of modernist models, urban renewal

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[Fig. 1] Xi Apartments, Banpo, Seoul. Photograph by author, 2011.

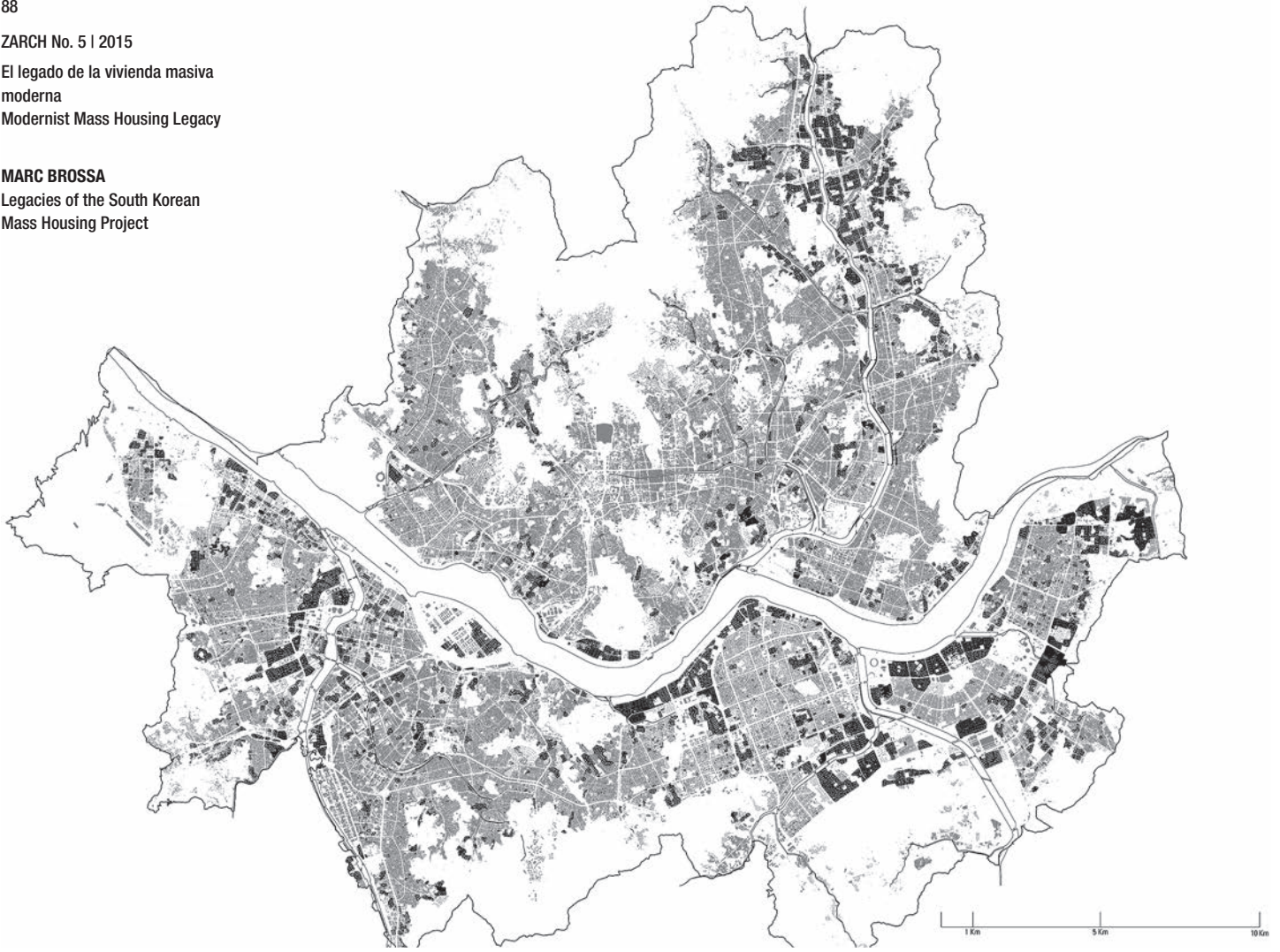
A different perception of mass housing in South Korea and in the West [Fig. 1]

In the West, mass housing estates are seen as an evidence of failed policies on housing. They were generalized especially after World War II as a solution to deal with postwar reconstruction and fast demographic changes. By planning the city in relatively large, unified portions, modern housing estates brought about a change of urban scale from the industrial city to the metropolis. However, soon problems with their integration within the traditional city and the extended region, the lack of infrastructure and services, inadequate maintenance programs and accessibility, and social marginalization rendered them as a source of social malaises. As a result, from the 1960s on and especially during the 1970s, mass housing estates drifted into a crisis in Europe and in the US, together with the urban ideas of the Modern Movement. In a few decades, Mass housing in the West quickly went from a utopian dream to a heterotopian nightmare.

Meanwhile, the Mapo Apartments in Seoul, the first mass housing estate in South Korea, started their construction in 1962 as a built manifesto of the modernization efforts that would legitimize the new regime of General Park Chung-hee. He had accessed power through a coup d'état the year before and was determined to lift the misery-stricken country after the Japanese colonization (1910-1945) and the Korean War (1950-53). In the opening ceremony for the finished housing complex, General Park declared:

"Korea has been emancipated from the feudal lifestyle marked by the permanence of rituals transmitted from antiquity; on a day like today I am reassured that the adoption of a collective lifestyle, by allowing Koreans to save time and money, will help improve the living conditions and the culture of the people". (Park Chung-hee,

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[Fig. 2] Mass housing estates in Seoul, 2003. See figures 7, 8, 9 and 10 for a phased sequence of implementation. Map by author. Source: GIS data.

inaugural speech for the Mapo Apartments, 1964. Quoted in Gelezéau 2003: 191)

The estate became a precedent for a mass housing policy that quickly managed to overturn the traditional preference for single-story housing in the capital. Between 1975 and 2010, mass housing estates made up for 58% of the housing construction in Seoul, with a total of 1,540,002 units built during the period (Seoul Development Institute, 2005). It has been estimated that in 2013 the city's housing estates were home to 1,284,359 units, where 53% of the population lived¹. See figure 2 below for a map showing the impact of mass housing estates in the city [Fig. 2].

Significance of mass housing in South Korea

East Asia and the Developmental Estate

The Western perception of mass housing as a failed project is diametrically opposed to its perception in Asian countries with very vigorous economic growth led by developmental estates during the second half of the 20th century: Hong Kong, Singapore, Taiwan, South Korea and China. Developmental states are characterized by a strong state intervention in the economy, an extensive regulatory apparatus and cooperation between the state and major industries. Their main goal is to promote industrial growth, to protect the public from abuses of the market and to provide collective goods, such as national defense or public education. They prioritize economic growth over political reform (Chang, 1999).

¹ Source: Seoul Center for Housing Policy Development, Seoul Metropolitan Government, 2013 (서울특별시 주택정책개발센터장).

This different perception of the mass housing phenomenon is linked to a different experience between East and West of a series of related concepts:



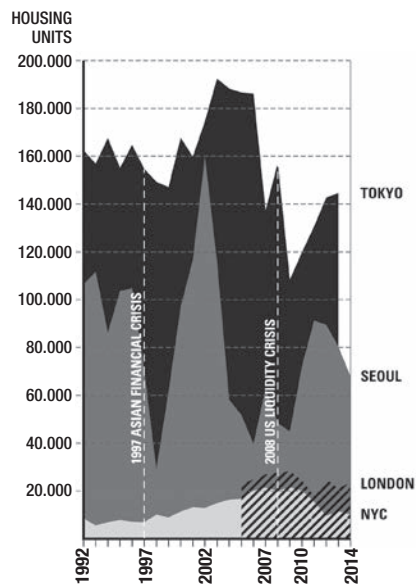
[Fig. 3] Construction of mass housing in Kumhwa district, 1969. The picture, taken in the northern hills of Seoul in the late 1960s, shows three phases in the evolution of housing in Seoul during the XXth century. In the foreground, a regular fabric developed during the Japanese colonial period (1910 - 1945) as an urban interpretation of the traditional Korean house or 'hanok'. In the background, perched on the hills, informal dwellings appeared particularly after 1945 as a result of the return of refugees after World War II and the Korean War. In between, the new typology of mass housing built by the public sector to address the escalating housing shortage. Source: Image taken on April 1st, 1969 by an unknown photographer. Published in the Kyeonghyan Newspaper, April 20th, 1969. Image rights courtesy of Kyeonghyan Newspaper.

- Modernity, industrialization and the urbanization process.
- The process of diffusion of these concepts, related to colonial and post-colonial processes.
- The delay of the modernization of these countries and regions in regards to their Western and Japanese counterparts, which has allowed them to borrow modern experiences and practices once they were fully developed.
- The role of the state in enforcing the modernization process, which has been seen as a 'revolution from above' and thus has been more pervasive and cohesive.

As Peter Rowe asserts, the overall effect of the combination of this factors is that *"The suddenness, strength and comprehensiveness of recent urban modernization in East Asia is such that the palpable results probably exceed Western experiences, even though the basic concepts were borrowed from the West, and will place the region, by and large, on a different path"* (Rowe, 2005: 46) [Fig. 3].

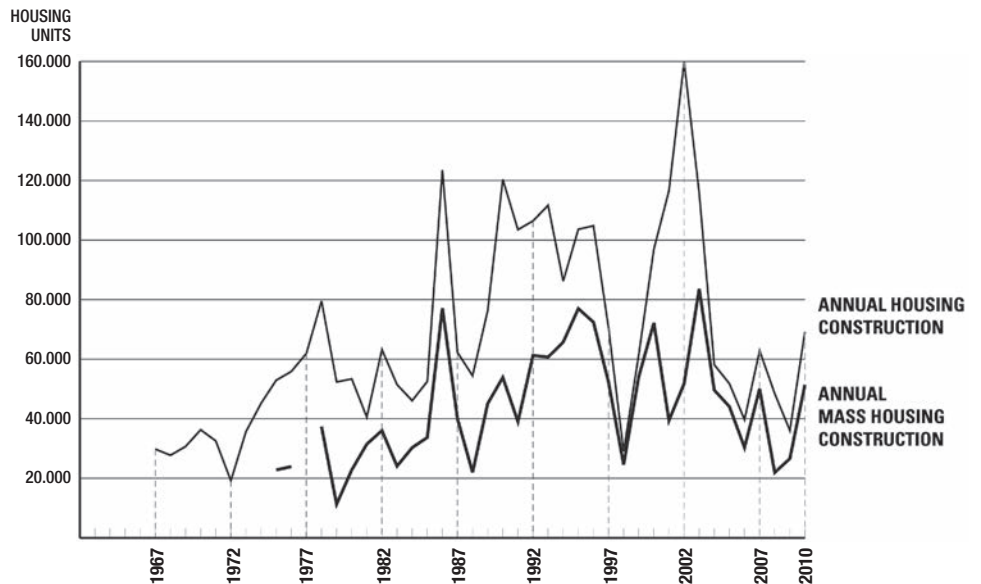
Housing the East Asian Miracle: Developmental Housing Policies

Housing has been a central issue of developmental economies in East Asia, with common housing policies that differ from Western economies. Developmental housing policies have focused on the mass production of apartments for the standard modern family as a socio-economic unit. Tied to centrally planned economic cycles, developmental regimes have been able to produce housing at rates unforeseen in the West due to their power to appropriate land and to mobilize the resources of public agencies and private corporations. These policies were directed towards slum clearing, the increase of land value and the promotion of fast growth. Home ownership was promoted in order to directly contribute to economic



[Fig. 4] Construction of new housing in Seoul, Tokyo, London and New York, 1992-2014. Noticeable issues in these last 22 years are the scale of production in the two Asian capitals compared to the Western ones; the instability of the production in Seoul; the impact of the 1997 Asian Financial Crisis in Asia, especially in Seoul; the tendency to grow just before the 2008 crisis everywhere; the relative recovery everywhere after 2008; and the third big drop in Seoul after 2012. Graph by author. Sources: Seoul Metropolitan Government Statistics, <http://stat.seoul.go.kr/jsp3/>; Tokyo Metropolitan Government Statistics, <http://www.toukei.metro.tokyo.jp/tnenkan/tn-eindex.htm>; UK Government Statistics, <https://www.gov.uk/government/statistical-data-sets/live-tables-on-house-building>; New York City Department of Buildings and NYU Furman Center, 'State of New York City's Housing and Neighborhoods 2002' and 'State of Land Use and the Built Environment 2014'.

[Fig. 5] Evolution of total housing construction with percentage of mass housing in Seoul, 1967 - 2010. The table reflects the steep increase in housing production by the end of the 1970s, when the urbanization of Gangnam was in its peak. The 1986 Asian Athletic Games and the 1988 Olympics also brought a huge temporal increase, and then the project for the construction of 2,000,000 housing units at the beginning of the 1990s started the construction of more than 100,000 units per year until the crisis of 1997, with a parallel increase in the proportion of mass housing. After the crisis the market recovered quickly due to the housing demand accumulated during the crisis period and also due to the renovation of the old complexes from the 1970s and 1980s. Graph by author (Seoul Development Institute, 2005; Land and Housing Corporation, 2010).



growth through the construction industry on the one hand, and on the other to support a low-taxation, low-public expenditure economy with minimum social protection measures. These policies were tightly related to a particular approach to welfare. Developmentalist social policy has not been oriented towards citizenship and social rights: instead of focusing on the vertical redistribution of wealth, the concern was exclusively economic growth and the provision of employment. The state promoted the reliance on the family as the basic social unit, through which individual welfare needs were achieved (Doling and Ronald, 2014). Figure 4 compares housing production in Seoul and Tokyo as cases of developmental housing policies, with the production in London and NY in the last 22 years. Figure 5 shows the ratio of mass housing production in Seoul since 1978, compared to total housing production [Fig. 4-5].

The diffusion of modern urban models in Korea

Modern planning and architecture arrived to Korea through the Japanese colonial machinery, as a means to ensure military control, support an incipient industrialization and optimize the extraction of resources. Japan had been developing its modern planning since the Meiji restoration (1868), initially as a mixture of local traditions and foreign concepts through a process of trial and error. Japanese planners were not only importing modern planning concepts, but they were also developing and experimenting them in the Asian colonies, where they could implement them through military power. Through the authoritarian imposition of Western-based developing planning practices in Taiwan, Korea, China and Manchuria, Japan acted as a transformer and interpreter along the way. The transmission of this Western expertise was not always strictly true to the originals, for either the Japanese experts could easily misunderstand the original concepts, or the foreign experts hired to bring this knowledge would not be able to gauge its appropriateness to the Japanese context. Based on the specificities of Japanese cities (need for rapid growth or reconstruction, compromised land ownership, etc.) and society (lack of tradition of large-scale urban plans, no tradition of integration of architecture and urban design, weak civil society), the planning discipline developed differently than in Western countries. It became controlled by bureaucrats within the central administration, focusing on pragmatic planning without ideology, based on tools and specific projects rather than on large-scale, comprehensive visions. That is why the Japanese importation of Western techniques and concepts and its adaptation to Japan and East Asia became very attractive for other Asian countries with similar urban conditions (Hein, 2003). This technocratic approach to planning, the

[Fig. 6] 'Apkujeong in 1976', by photographer Jeon Min-joo. The photograph shows the construction of the Hyundai Apartments in Apkujeong, on the south banks of the Han river. This estate became a turning point in the evolution of housing policies in Seoul as it began a shift towards the private development of mass housing. Image rights courtesy of Mr. Jeon Min-joo.



disciplinary split between urbanism and the architectural profession, and the import of Western models and techniques devoid of ideology became the norm during the emergence of mass housing during the developmental period in South Korea.

The Social Machinery of Mass Housing in Seoul

The housing policy during the years of economic growth offers a good example of the developmental ideology: to support home ownership by providing mass housing below the market through a system regulated by the state, funded by citizens and promoted by private builders. It was a social contract that benefited the three basic pillars of the regime:

1. By providing access to home ownership, it allowed the emergence of a new urban middle class that in return would support the regime. This vital workforce would become part of the capitalist production cycle both as an agent and a beneficiary of economic growth.
2. The administration was able to finance itself through construction taxes and through the sale of buildable land which acquired cheaply. Supporting home ownership was also a strategy of social control.
3. The need to provide housing facilitated the emergence of large, private construction and developing companies approved by the state, which monopolized the housing market. The middle class would become a captive consumer base of this monopoly.

The gradual establishment of the parameters that governed the housing estates took place in parallel to the standardization of modern lifestyles and to the creation of new social ideals. Unlike in the West, South Korean mass housing estates were not a product of the industrial society, but an instrument of industrialization (Gelezéau, 2003: 192). The diffusion of the apartment model was a means to 'urbanize' the waves of immigrants from the countryside. The population who had access to mass housing could not do so because it belonged to the urban middle class; they became part of this middle class through the purchase of an apartment. Mass housing soon became the symbol of belonging to this new class, composed by the skilled workforce of the new enterprises: managers, officers, directors, executive employees, etc.

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[Fig. 7] Location of mass housing estates in Seoul in relationship to urban infrastructure, 1962-1972. Map by author.



[Fig. 8] Location of mass housing estates in Seoul in relationship to urban infrastructure, 1972-1988. Map by author.

While it is common in modern industrialized societies the affirmation of social status through lifestyle, place of residence and type of housing, it is quite unique to South Korea the fact that this symbol of social prestige is a standardized apartment unit within a mass housing estate (Gelezéau, 2003: 192) [Fig. 6].

Evolution of mass housing estates in Seoul in relationship to urban infrastructure

In order to assess the logics for the location of mass housing estates in Seoul over time, this section shows a phased sequence of their implementation.

Provision of minimums & experiments on mass housing: 1962 – 1972 [Fig. 7]

This period corresponds to the two first 5-year economic cycles implemented under the administration of General Park Chung-hee, who accessed power through a coup d'état in 1961. Already in 1962 a series of laws were passed in order to facilitate public investment and the implementation of mass housing. In the same year, the Mapo Apartments (1) were built as a model of the new housing policies and of the modernization efforts of the regime.

Initially, housing policies were oriented towards the relocation of dwellers from the many slums along water courses and hillsides surrounding the traditional city, so land could be freed for urban development. Apartment buildings were humble structures hosting small units between 28 and 33 m². But soon the lack of proper financing resulted in shabby construction techniques, which brought many building pathologies and social unrest. The collapse of the Wow Apartments in 1970 after 3 months of being built and its 33 casualties signified a turning point in the housing policies of the regime: from then on, they would focus on providing modern housing for the growing middle class. In order to change people's perception towards apartments, a series of pilot projects were implemented.

Mass housing for the middle class was to be built on public land on the shores of the river. The natural direction for the urban growth of the city was SW, following the train tracks to Incheon. The government experimented with planned urban growth patterns in Icheon-dong (the strip of land between the US Army base and the river on the northern bank) (2), in the island of Yeouido (3) and in Banpo on the southern bank (4).

These mass housing projects were tightly related to infrastructural projects along the river. In order to prevent flooding due to the yearly summer floods, the river was regularized and an embankment was constructed on both sides. Besides flood control, this embankment would become the base for a transportation corridor of highways and bridges along the river, and would free up land for development on previously floodable land.

Generalization of housing estates & transition to the private sector: 1972-1988
[Fig. 8]

This phase started off with the beginning of the third 5-year economic plan and the Yushin Constitution of 1972, and ended with the 1988 Olympic Games in Seoul. The Yushin Constitution was a change in South Korea's constitution that granted dictatorial powers to Park Chung-hee, in response to a perceived weakened role of the state due to international political instability related to the Cold War and to domestic social unrest. The 1988 Olympic Games became the opening of the capital to the world, together with the transition to democracy initiated in 1987.

In response to the political climate, the regime chose to lure the growing middle class by providing means to own real estate in the form of mass housing, thus securing its political support. After the experiments of the preceding period, the Housing Construction and Promotion Act was passed in 1972. The law was catered to promote mass housing estates in dedicated areas on the southern banks of the river specifically (Gangnam), and housing construction benchmarks were established in connection to national economic plans. The law was modified later in 1977 in order for the government to control the price of new housing below market, thus generating an even bigger demand. Progressively, the public sector yielded its active role in the construction of housing to private companies and adopted a facilitating and managerial task. A massive housing program of 5 million housing units was implemented (1980-1986).

Development on the southern banks of the river was seen as an opportunity to define a modern capital according to international planning precedents. Different types of planned grids were adapted to the existing agricultural patterns and topography.

Following the infrastructural works along the river, the wall of apartment complexes continued eastwards: Apkujeong (4), Jamsil -where the Olympic facilities would be located- (5 and 6), and all the way to Godeok-dong (7). In a similar fashion, hydraulic



[Fig. 9] Location of mass housing estates in Seoul in relationship to urban infrastructure, 1988-1997. Map by author.

works were carried westwards from Yeouido, providing new land for housing. The new town of Mok-dong (8) was planned to provide a pleasant backdrop to Olympic visitors landing in nearby Gimpo airport. The NE corridor on the old route to North Korea would be the last frontier of development (9).

With the generalization of mass housing and the shift to the private sector, housing became a source of revenue for the government. Housing taxes and the sale of buildable land to the private construction companies took care of public infrastructure needed to supported urban growth. The National Highway #1 to Busan built over the precedent period articulated urban growth towards the SE in Gangnam, while a formation of new bridges and the first 4 subway lines connected new residential areas with the consolidated city and opened up new development possibilities.

Consolidation of housing models & emergence of the satellite cities: 1988 – 1997
[Fig. 9]

The period of intense growth until the 1988 Seoul Olympics brought Seoul and South Korea to an urbanization rate of 70%, similar to developed countries. Similarly, housing quality indicators reached levels comparable to European and north-American societies. And finally the housing shortage index started to recede. The rate of urban growth slowed, and at the same time the lack of buildable land, strong demand and speculation raised the price of apartments and of housing in general. This third period ended with the financial crisis that affected East Asia in the winter of 1997.

Since 1988, a set of anti-speculation measures was implemented in order to control housing prices. In 1990 the government approved the creation of 5 new satellite cities (Bundang, Ilsan, Pyeongchon, Sanbon, and Joongdong) beyond the greenbelt in order to alleviate problems related to the increasing density, housing speculation and the lack of rental housing. After 1995 there was a gradual liberalization of prices for new housing.

Except for the satellite cities, the construction of new mass housing during this period occurred as infill of the planned urban grids from the previous periods or in renewal of traditional fabrics, and was thus not as focused in specific areas as it had been in the previous phases. Still, we can observe denser concentrations



[Fig. 10] Location of mass housing estates in Seoul in relationship to urban infrastructure, 1997-2008. Map by author.

around Nowon-dong (9) in the NE corridor and in Gayang (10) and Banghwa (11) on the western edge.

The jump of Seoul to the metropolitan scale was reflected in terms of infrastructure with the creation of a new ring road (Highway #100), that articulated the relationship of the city with the greenbelt that surrounded it, and with the 5 satellite cities beyond. The new subway line #5 connected the recent areas of growth East and West with the city center.

Economic deregulation and urban renewal: 1997 – 2008 [Fig. 10]

Period between the 1997 East Asian financial crisis and the 2008 global crisis. The construction sector, a driver of the national industry, took a serious blow in 1997. The macroeconomic policies and structural reforms implemented by the IMF in order to control government interference in the economy and the close linkages between banks and conglomerates had a direct effect in the housing market. Since 2002, the ratio of housing supply has been above 100%. The effect of the 2008 world financial crisis in South Korea made evident that the socio-economic background that supported the mass housing model had changed, challenging its continuity.

During this period a gradual deregulation of the economy took place, together with the liberalization of the markets, linked to the widespread globalization phenomenon. The price limitation policy was cancelled and the Housing Bank was privatized.

The main effects of these policies were widespread speculation and the emergence of new housing typologies. At the same time, the obsolescence of older housing complexes and the expectation of real estate profit boosted the processes of urban renewal and gentrification.

As in the previous phase, construction of mass housing in this period has been widespread around the city, either as infill of existing urban fabrics or as a renewal strategy of older complexes. The very last remaining empty plots in the municipality of Seoul (Magok (12), Gupabal (13), Weyre (14)) have also finally been planned to host mass housing complexes.

Subway lines 6 running East - West on the northern side and 7 running SW - NE complement the public transportation infrastructure and provide access to the last New Towns.

As an overall conclusion, the location of mass housing estates in Seoul during the years of fast urban growth did not respond to a larger urban vision capable of structuring these new developments and their relationship to the existing city and the natural support. Instead of being planned in anticipation, mass housing estates were used as a quick fix to the looming housing shortage. Their distribution was determined by the availability of buildable land, housing policies at national level, and economic profit rather than by the needs and characteristics of the city and its territory (Sohn, 2003). This is particularly evident in the lack of planning of a significant network of open spaces, or in the lack of integration of natural features such as the hydrological network and the topography.

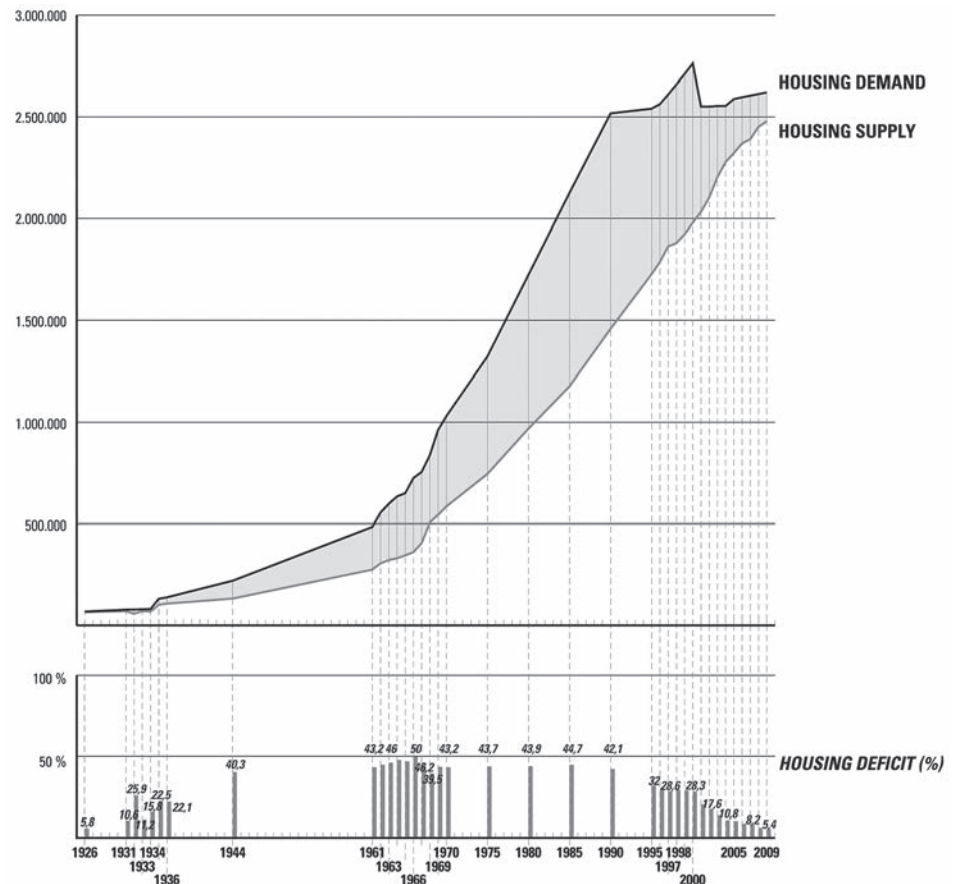
Specificities of mass housing in Seoul

Inner city residential renewal

Seoul has experienced an impressive residential renewal process since the early 1970s, due to different reasons: initially it was due to the large amount of informal settlements in the city after the Korean War (1950-53), but later to the changing needs of the growing urban middle class and to the expectation of real estate speculation. This perpetual process of urban renewal has its legal basis on two laws at national level: the Housing Construction Promotion Act (1972, amended 1977) and the Urban Renewal Act (1977), which intended to provide housing for the home ownership of the middle class with minimum public expenditure. In 1983 the government introduced an urban renewal system known as 'Joint Redevelopment' (JR). The system is based on the formation of a voluntary contract between property owners, resident's associations and developers. This contractual partnership relies on the economic profit to be obtained with the difference between the built FAR and a new one established by the administration. Owners provide the assembled land, the development/construction company provides the capital and executes the project from site clearance to the construction of mass housing, and the government defines clearance areas and authorizes building removal. In return, each property owner receives back built area proportional to his/her contribution, and the construction company makes a profit by selling the extra units. The municipality also benefits, since it collects taxes from the construction and the real estate transactions.

The success of this partnership was based on the special combination of two preconditions: the possibility to develop high-density housing in order to maximize built areas (which the city has favored), and a chronic housing shortage in the capital for most of the century, that ensured a market eager to buy housing (See figure 11 below). These preconditions, together with the reduction of construction costs and the optimization of financing, favored the choice of apartment complexes as the hegemonic residential solution. Another consequence of the joint redevelopment system was the accelerated removal of squatter settlements in Seoul. The JR system implemented in Seoul is a reminder of the slum clearance projects adopted in the name of progress from the time of the Weimar republic (1920s) in terms of the destruction of historic fabrics and built heritage. It has perpetuated one of the most controversial legacies of modernism despite widespread criticism in the West since the 1960s. By the time the JR system was implemented in Seoul, mass housing estates and related slum clearance projects in Europe and in the US were already seen as a source of social malaises. It is interesting to note that on March 16th, 1972, on a date absolutely contemporary to the passing of the Housing Construction Promotion Act, began the famous demolition of 33 of the buildings in the Pruitt-Igoe complex in St. Louis, which led to Charles Jencks declared the date as '*the day Modern Architecture died*'². That demolition was fixed in the collective

2 '*Modernism ended at 3.32 pm on 15 July 1972, at the point when a clutch of high-rise residential blocks Pruitt-Igoe in St Louis, Missouri, were dynamited – an act of destruction which has been taken to signal the bankruptcy of both the modernist project and State-sponsored mass-housing*'. (Jencks, 2002)



[Fig. 11] Housing deficit in Seoul 1926 - 2009. Graph by author (Seoul Development Institute, 2005; Land and Housing Corporation, 2010).

imaginary of a whole generation in the film '*Koyaanisqatsi: Life Out of Balance*' (Reggio, 1982) [Fig. 11].

There are two basic types of Joint Redevelopment projects: public residential redevelopment and private residential renewal.

Public residential redevelopment: Known as Jae-Gae-Bal (JGB), is a housing renewal program supported by the City, who defines target areas for renovation. It was originated in the strategies for squatter clearance from the 1960s and 1970s, and it became very popular since the early 1980s with the implementation of the JR system between owners and development companies. It also expanded its focus towards the redevelopment of substandard housing in general.

JGB projects are found in areas where squatter settlements were located in the 1960, typically hilly areas near downtown (Sungbuk-gu, Sungdong-gu, Mapo-gu...) but also in areas where squatters from those areas had already been relocated during the 1960s and 1970s, such as Gwanak-gu in the south.

Private residential renewal: Or Jae-Gun-Chuk (JGC), it denominates the voluntary joint renewal of a group of properties by their owners, typically an old mass housing estate. Their scale can vary greatly, depending on whether it is a single estate or a group of estates within an area designated as Apartment District. According to the Housing Construction Promotion Act (1972), the JGC system could be implemented in apartment complexes older than 20 years not complying with minimum structural safety standards. The program gained popularity specially after 1990, since the generalization of apartment complexes started in the decade of the 1970s. It targeted complexes typical of the time, characterized by small units (below 60m²), lack of modern amenities (no elevator, no central heating), maintenance issues due to poor construction techniques and occupied by tenants with limited means. The replacement of these older complexes by larger, more modern and more expensive ones and the lack of a proper social housing strategy implied the significant loss of affordable rental units (Kim, 2004).

230,456 buildings were demolished between 1973 and 2008 as a consequence of the JR system, and 492,381 new units were built. Most of the squatter settlements of Seoul disappeared during the period, and a process of social substitution has occurred due to gentrification: only about 40% of the property owners and 10% of tenants returned to the redeveloped areas upon completion (Kyung; Kim, 2011). The recent crisis of the model (see *Crisis of the mass housing model in South Korea* later) has forced the revision of many of the areas designated for renewal. In January 2012, the recently elected mayor Park Won-soon announced the intention to review 610 areas from a total of 1,300 in the capital (Dong-A Ilbo, 2012). By April 2015, 245 of those areas proposed for renewal had been cancelled (Maeil Business Newspaper, 2015).

Urban extension: Satellite Cities

One of the consequences of the establishment of the greenbelt in 1971 as a measure to limit urban growth was the emergence of planned satellite cities in the areas beyond its limits since the late 1980s (see figure 12 below). Mass housing estates became the most prevalent housing typology within this self-contained urban developments planned from scratch. They were part of the national Two Million Housing Construction Plan (TMHCP), initiated under the first democratic regime of Roh Tae Woo with the intention to address Seoul's housing problem, as well as to gain political support for the new regime and to form coalitions between the state and the private sector (Yu, 2013).

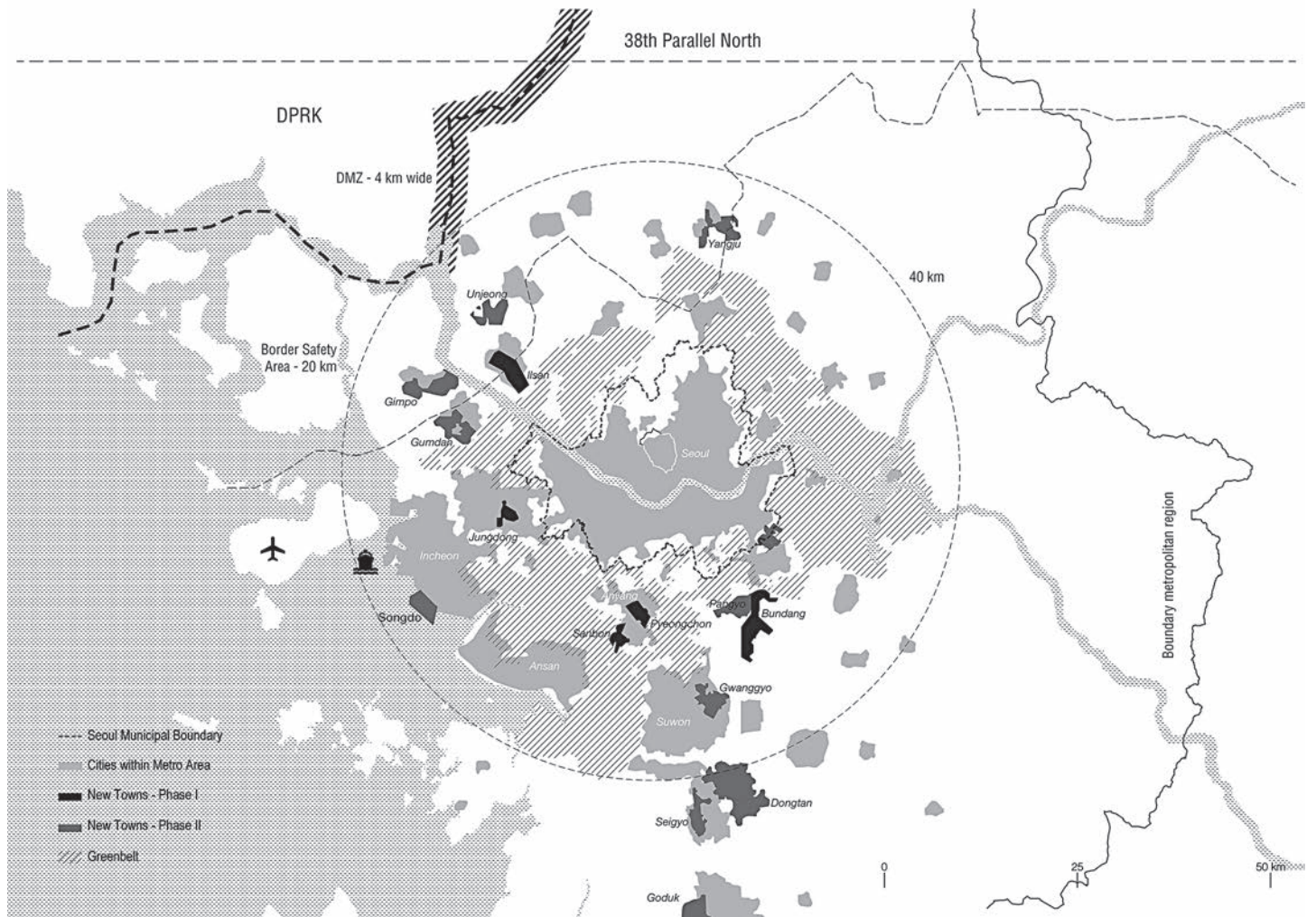
In contrast with many Western experiences, the first wave of new towns, and Bundang and Ilsan in particular, were financially quite successful. This was due to the particular political situation and to the unique housing market conditions in Korea at the time:

- a) The chronic housing shortage in Seoul during the 20th century, as shown in figure 11.
- b) The developmental regime, with direct control and intervention on the economy and the development of housing.
- c) An established housing financing system based on private demand, paid through sales in advance.
- d) The political goal of gaining support for the first democratic government of Roh Tae Woo, who despite winning the elections was related to the previous military regime.
- e) A very limited timeframe, as the Two Million Housing Construction Plan was seen as a quick fix for the political challenges of the Roh regime and thus had to coincide with the 5-year presidential term.

The fast and profitable development of Bundang and Ilsan established a reputation for Korean new towns being profitable and inspired a lasting reliance on this type of development and their emulation in developing countries (Yu, 2013). The gradual incorporation of new technologies and energy-efficient construction techniques has evolved the new town model into 'smart cities', with the intention to market Korean technological sophistication and sustainability know-how to rapidly urbanizing contexts. Songdo International Business District, built on reclaimed land in Incheon, is the showcase for the smart city or compact eco-city model [Fig. 12].

The role of open space in the development of mass housing in Seoul

The emergence of mass housing estates in Seoul during the years of fast urban growth was not complemented with the planning of a network of open spaces. They were simply not regarded as an indispensable asset.



[Fig. 12] Location of Seoul's greenbelt and satellite cities. Map by author.

The Park regime (1961-1979) did not take urban planning as a priority. Its focus was instead on industrial development and the support of basic infrastructure that could generate economic growth. Since the 2nd five-year economic plan (1967), the administration started to tackle the issue of housing shortage. Parks and other types of open spaces were used as a space reserve for the location of public facilities or to relocate residents from informal settlements (Hwang, 2003). This encroachment upon urban open spaces had already started during the period of political turmoil since the liberation from Japanese rule (1945) until after the Korean War (1950-53). There was simply not enough housing supply to accommodate the sudden influx of overseas Koreans and refugees from the north, and informal settlements appeared along streams, on the hills surrounding the city and in any available urban space. The lack of public provision of open space meant that it was left to the private developers to include it within the new housing estates. Thus, open space became a major factor in the design and marketing of modern housing estates, and ultimately it was left to the citizens-residents to pay for it.

The planned extension of the city towards the southern banks of the river since the late 1970 (Yeouido, Banpo, Gangnam, Jamsil) was a missed opportunity to secure much needed open space. It was still simply not regarded as a priority, and the administration sold the land to private developers for profit (Hwang, 2003).

An important element in the physical planning of the capital was the implementation of a greenbelt in 1971, borrowing heavily from those of London (1949) and Tokyo (1958) (see figure 12 above). However, the reasons behind its adoption were not the amelioration of the living conditions in high-density environments, but more pragmatic concerns (Bae, 1998):

MARC BROSSALegacies of the South Korean
Mass Housing Project

- To provide a military buffer to the north, in provision of possible conflicts with North Korea.
- To eliminate informal settlements around the capital.
- As an urban growth boundary in order to prevent urban sprawl and encourage growth beyond the greenbelt via planned satellite new towns.
- To control land speculation.
- To preserve the natural environment and agricultural resources surrounding the city.

There has been much debate about the effects of the greenbelt, with many voices asking for its cancelation over the years. In terms of its effects on housing, though, some facts are clear: while the greenbelt policy discouraged speculation in the short run, in the longer one it increased speculative activity both at the core as well as in the areas beyond the greenbelt, by reducing even more the availability of developable land. The greenbelt increased the size of the city, land values, house prices and building densities (Han, 1986).

It would not be until the decade of the 1980s, with the international exposure of the 1988 Seoul Olympic Games and a changing perception towards living environments, that a new generation of public parks and natural open spaces would appear, heralded by the Olympic Park in Jamsil and the linear park along the Han river that crosses the capital. Overtime, the mountainous nature of Seoul and its particular hydrological network have doubled as a green infrastructure that provides much needed respite areas for Seoulites.

In terms of the common open spaces provided within the estates, they have evolved dramatically in 50 years, reflecting changes in lifestyle, residents expectations, technological advances and influences from abroad. Given the standardization of the housing blocks, the design of open space has become a major marketing issue for the construction companies. The main open space typologies are:

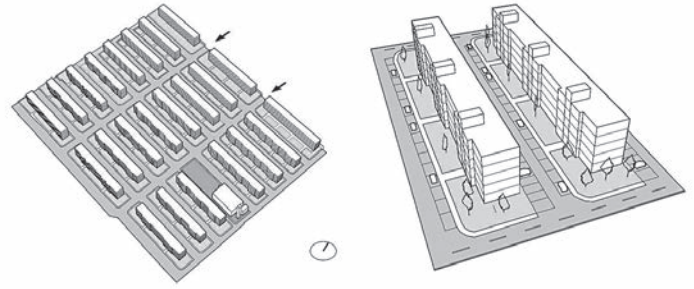
a. Military camp layouts (1960s-1970s): This was the way the first housing estates were described, due to the uniformity of the linear blocks following a regular grid. They were based on the *siedlungen* developed during the 1920s in Germany, but faced south instead of following an East-West orientation due to geomantic influences. Due to limited car ownership, there was no separation of traffic and no dedicated pedestrian network. Open space was limited to dedicated green spaces where parts of the grid had been left empty, and linear buffers between blocks provided for privacy (See figure 13 below).

b. Pedestrian central spines (1970s): With the increase of density, housing blocks grew in height and there was more room in between them to ensure sunlight. This and the demand for parking due to the increasing car ownership called for a specialization of the ground plane. Vehicular and pedestrian circulations were separated according to an interpretation of A. Perry's neighborhood unit. Parking areas were kept in the perimeter and pedestrian circulations and leisure areas were located inside the complex.

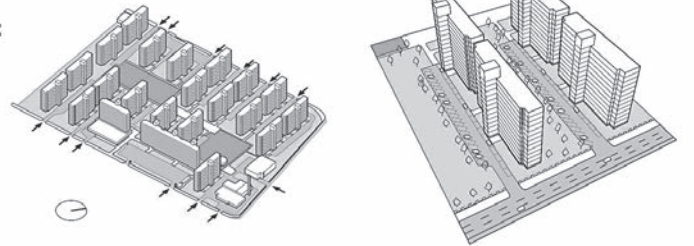
c. Clusters (1980s): The growing demand for parking space forced the radical specialization of the ground plane between a vehicular domain and green and leisure areas. Buildings began to be arranged in groups or clusters around their shared parking facilities, which in some cases started to add underground levels. The common open space integrated the different clusters of the complex and allowed for the total separation of pedestrian routes.

d. Towers on the park(-ing) (1990s on): Since the end of the 1980s there was a gradual shift towards the private sector and an increase in density. The

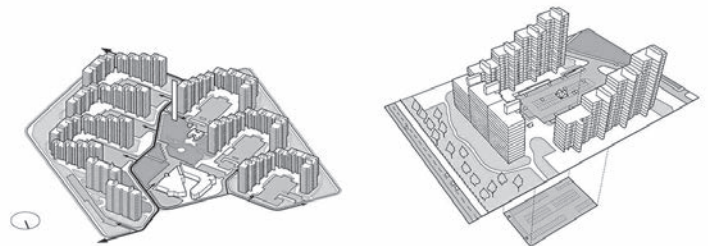
Military Camp:
HANGANG MANSION
APARTMENTS
1970



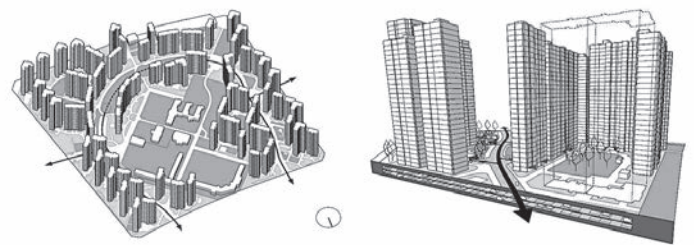
Pedestrian Central Spines:
YEQUEUDO SIBUM
APARTMENTS
1971



Clusters:
ASIAN ATHLETIC GAMES
VILLAGE APARTMENTS
1986



Towers on the Park(-ing):
JAMSIL RICENZ
APARTMENTS
2004



[Fig. 13] Main open space typologies of mass housing estates in Seoul. Illustration by author.

compositional monotony of linear blocks was gradually lost in favor of slimmer towers with a diverse skyline, and underground parking facilities became the norm. The ground plane was thus freed from the servitude to traffic and the landscape in between buildings became a highly manicured and maintained commodity that camouflaged the artificial basements. Previous strategies such as pedestrian spines and clusters of buildings around common facilities were integrated within this sophisticated landscapes, which managed also to define edges, provide privacy and define areas for leisure, recreation and relax. The degree of sophistication of the landscapes was directly related to the status and price of the apartment complex [Fig. 13].

Lack of authorship and the social role of architects

The urban planning of Seoul and specifically the development of mass housing since the Park Chung-hee regime was an issue of national interest. It was thus controlled by the central government and highly regulated by technocrats through laws and guidelines in accordance to 5-year economic plans. The Land Use Law and the District Unit Plan ruled the construction of mass housing at different scales, establishing parameters such as FAR, volume, shape, and even color, type and layout of the units. The standardization and homogenization of the apartment model was further favored by the government's control of their price below market value and by the preference for the design-built (turnkey) delivery system of the projects. Furthermore, since apartments quickly became a mechanism for real

estate investment and capital accumulation, homeowners would discourage experimentation beyond the norm as it would affect their exchange value. The standardization of Korean apartments due to the strong centralization of mass housing is closer to the homogeneity of soviet housing projects than to the experimentation found in the British new towns, in the French *banlieues*, or in the iconic, single high-rise apartment buildings that have sprung in global cities.

The design of mass housing estates in Seoul has been the outcome of a series of technocratic decisions that have prevented the idea of authorship and have lead to a total disinterest from the academic and critical areas of the architectonic profession. The 1986 Asian Athletic Games Village Apartments by Joh Sung Yong and the 1988 Olympic Village Apartments by Woo Kyu Sung in Jamsil are notable exceptions, since they were the outcome of design competitions with the intention to create showcase developments.

In return, this detachment of architects from the design and construction processes of such a big portion of the built environment challenges their social and professional role.

Crisis of the mass housing model in South Korea

The global economic downturn that began with the liquidity crisis in the US in 2008 uncovered a number of latent issues in relation to the mass housing model in Seoul:

- Reduction of housing deficit. The supply of housing in the city, which had been as low as 50% in 1966, reached 96.7% in 2010. In the rest of the country, supply had reached 100% in 2002 and continued to rise up to 112.9% in 2010. For the first time since the 1920s, there was no housing deficit.
- Changes in family structure. The traditional middle class nuclear family catered to by the mass housing model was composed of a couple with children and often included two generations, since children (especially the heir) are expected to take care of their parents according to the Confucian tradition. In recent times however, different and more diverse spatial needs have appeared due to the fragmentation of the nuclear family.
- Negative population growth. Demographic predictions for Seoul are negative for the next 30 years. This adds to the reduction of housing demand.
- Real Estate Bubble. As a result of the above conditions, there were a total of 16,169 unsold apartments in Seoul in 2008. The number rose to 25,057 in 2010 and to 38,662 in 2012. Because of this situation, prices of apartments in the metropolitan area fell by 14.7% between July 2008 and December 2012 (Park, 2013).
- Changes in municipal housing policies. Since 2011 the municipal government of Park Won-soon introduced changes to the housing policy: cancelation of designated urban renewal areas through mass housing, and support of alternative typologies more catered to the present sociological context.

These shifts are too recent to be fully evaluated, but they are symptoms of deep changes in the socio-economic background that favored the emergence and widespread of mass housing in Korea and pose important questions to its continuity [Fig. 14].

Legacies of the South Korean Mass Housing Project

Up until the end of the Korean War (1950-53), the economy of South Korea was mostly based on agriculture. 75% of the population lived in the countryside, and



[Fig. 14] Urban landscape in Seocho dominated by mass housing estates, typical of the southern part of Seoul. Photograph by author, 2012.

the population of Seoul amounted to only 1.5 million people. Today, more than 80% of the Korean population is urban. About 24 million people live in the metropolitan area of Seoul, within a radius of about 30 kilometers. This population is about one half of the whole nation, and 53% of them live in mass housing estates.

The urban and social landscape that Seoul became during the second half of the twentieth century was so determined by mass housing policies that the contemporary organization of the capital cannot be understood without taking the housing estates into account. Not only these forms of collective housing have been highly successful in addressing the chronic housing shortage that dragged in Seoul since the 1920s, but they have also been instrumental in the fast urbanization process and in the accumulation of capital by a large portion of the population. They have also rationalized the modern habitat and have become a tool for urban growth and renewal, a form of social control, and a key element in the formation of a new urban middle class. Due to all this, Korean mass housing estates are one of the most characteristic products of Korean modernization (Gelezéau, 2003: 169). All this was possible due to the combined effect of a set of conditions very specific to the context of South Korea during the period:

- A chronic housing shortage initiated in the 1920s under the colonial era, exacerbated with the influx of refugees and exiled population after WWII and the Korean War (1950-53), and later with the concentration of economic opportunities in the capital since the Park Chung-hee era.
- An authoritarian regime with a developmentalist ideology and a social engineering agenda, legitimized by an international context of Cold War and supported by the U.S. in terms of military power, but also economically, politically and strategically. This regime favored economic development over political reform and linked the urban development of the capital to national economic policy.
- The partnership between the state and private corporations according to common goals (or corporatism): national development on one hand and economic profit on the other. The state implemented strict performance standards in return for subsidies and a share of the market. This highly controlled market would in return create a captive consumer base with limited options to the products it had access to. Housing would be one of such products.

- A limited public investment on housing. The Park regime initially focused its meager resources towards economic development and basic infrastructure, and thus did not consider the amelioration of living conditions as a priority. Especially after the period of political instability that culminated with the Yushin constitution (1972), the state sought the political support of the emerging urban middle class by providing access to home ownership. The role of the state would be to facilitate development, control prices of new housing and provide systems for capital accumulation. Private development companies would execute the construction and sales, and prospective buyers would be in charge of paying for the whole operation in advance without available financing.
- This process of modernization, economic development and urbanization took place late compared the post-WWII urban reconstruction in the West and in Japan. This means that there was a large availability of development strategies, financial mechanisms, technical expertise and built references ready to be adopted and implemented.

What can be learned from the phenomenon of mass housing estates in Seoul and what challenges do they face?

Mass housing know-how and exportation of mass housing models

The recession of the building industry in South Korea, the experience of Korean construction companies in mass housing, their presence in the international scene since the 1970s with the infrastructural projects in the Middle East, and the role model of the country due to its economic success and fast urban development (specially with the new town projects) imply that Korea is changing its profile from an importer and adaptor of mass housing models to becoming a diffuser. To that end, the Ministry of Land, Transport and Maritime Affairs and the Korea Land and Housing Corporation³ created in 2012 the International Urban Development Cooperation Center (IUC) in order to develop overseas market penetration plans and support Korean construction companies to pursue overseas urban development projects. The main Korean construction companies (Posco Construction, Daewoo, Kyeongnam, Daewon, GS Construction, Bando Construction, Samwon Construction, Hanwha, Woorim Construction, etc.) are involved in projects in Vietnam, Malaysia, Singapore, the Emirates, Kuwait, Saudi Arabia, Oman, Algeria, Qatar, Libya, Egypt, Senegal, Angola, Nigeria, Tanzania, Tunisia, Kazakhstan, Azerbaijan and Bolivia (Land and Housing Corporation, 2012).

The fast and profitable development of Korean new towns has inspired their emulation in developing countries, eager to address their demographic pressures but also to relate their rapidly growing metropolises to the global economy and to promote them as world cities. But despite the adoption of universal building forms from the modern legacy, the specific conditions of their implementation and financial success render Korean new towns as an original phenomenon in their own right and makes them difficult to replicate elsewhere. In terms of the importation of the smart city model, the costs of developing them poses serious questions to their applicability in developing countries (Stokols, 2014).

Building legacy

As we have seen, nowadays more than 50% of Seoul's population lives in mass housing estates, which constitute a built stock only comparable to that in cities in the former USSR and in other developmental regimes in East Asia such as

3 The Korea Land and Housing Corporation (LH or, 한국토지주택공사) is a government-owned corporation responsible for the development and maintenance of the land and housing. It was created in 1962 under the name 'Korean National Housing Corporation'.

Singapore, Hong Kong or China. Up until recently, the renovation of housing estates in Seoul was tied to the expectation of economic revenue and has been a major driver of urban renewal. Older estates have been replaced with a consequent increase in FAR that rendered the operation feasible. But if the indicators detailed above in *'Crisis of the mass housing model in South Korea'* are correct and South Korea is indeed facing a crisis of the mass housing model, the renewal from scratch of the estates cannot be taken for granted anymore.

Urban legacy

Especially since the 1970s, housing policies in Seoul were aimed at providing homeownership access to the middle and upper classes through their own private investment. Real estate speculation became the main source of investment and capital accumulation for families. This situation derived into a generalized acceptance of speculative processes in regards to the built environment and in deep social inequalities among those who could take part in the speculation game and those who could not afford it. The expectation of real estate profit has caused the gentrification of many sectors in the capital. These processes of urban renovation (especially through the joint redevelopment projects) are based on the *tabula rasa* substitution of existing fabrics by apartment complexes without any regard to the preexistences or the urban context (See figure 15 below). This geography of speculation prioritizes perpetual renewal before preservation or sustainability concerns. Due to this cycle of gentrification, the average time between changes of residence in Seoul is 6.3 years⁴.

Furthermore, there was no holistic urban vision structuring the logics of location of mass housing estates and their relationship to the rest of the city during the period of intensive urban growth. As the sequence of maps of the evolution of mass housing shows, some growth waves can be observed, but they are more related to the availability of land than to any planned growth strategy (See *'Evolution of mass housing estates in Seoul in relationship to urban infrastructure'*). The absence of a holistic urban vision also implied the lack of contribution of the estates to general urban systems. They were conceived as independent housing blocks rather than functional parts of the city (Ferrer, 1996: 20), and stand today as gated communities with their own private common spaces and facilities. Also, the extreme functional simplification of the estates as bedroom communities within the city comes at the cost of a forced mobility.

Given that 95% of the buildable land in the capital has already been built and that mass housing estates are home to 53% of Seoul's population and stand as the largest built stock, successful urban management in the near future will depend on how issues of maintenance, transformation and adaptation of this built legacy are approached. This situation opens up a whole new arena of opportunities and challenges for designers and decision makers.

As South Korea is quickly entering a new phase of its urban modernity, the legacy of its mass housing project will be a critical issue. The challenge lies on how to transition from a paradigm of urban renewal based on quantitative terms in order to obtain immediate economic benefit, towards a paradigm of urban quality that takes into consideration:

- The preservation of existing buildings and communities.
- The integration with the context.
- Urban pluralism through mixture of uses.
- The incorporation of sustainable strategies for funding and use of resources.

4 Source: Ministry of Land, Infrastructure and Transport (국토교통부).



[Fig. 15] 'Tabula rasa': portion of the historical district of Sangwansimni being cleared before the public residential redevelopment process known as Jae-Gae-Bal (JGB) takes place. Photograph by author, 2011.

- The right to housing for the most disadvantaged sectors of society.
- A holistic urban vision capable of re-articulating the relationship of the mass housing estates with the rest of the city and the natural support, through medium-term and long-term plans.

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