
10. The Land Readjustment Program

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Policy Area: Urban Planning

Definition & Background

The Land Readjustment Program is a replotting-based approach, exchanging and subdividing/combining the land without altering the relationship of rights in existence prior to the program. This method of securing land for public facilities and developing built-up areas in the city was adopted as a way to prevent disorderly urban sprawl as the city grew in areas without sufficient financing. It also sought to acquire public land in new built-up areas in advance. One the advantages of the program is that public land can be acquired without investing public resources as the land owner is compensated through replotting as per a certain percentage of lots on the land set out for public use or for other plans. Priority to become the program entity (and implement the program) is given to the land owner and the association. If this does not occur, the national government, local governments, the Korea Housing Corporation, or the Korea Land Development Corporation can implement it.

Characteristics by Period

Prior to the 1960s: the “Joseon Town Planning Ordinance” for Residential Areas

The Land Readjustment Program began with the Joseon Town Planning Ordinance in June 1934 while Korea was still under Japanese colonial rule. In February 1937, Seoul chose Donam and Yeongdeungpo districts as the first areas and Daehyeon as the second. The program was implemented in 10 districts spanning over 16,952,000 m² between 1937 and 1945. In the 1950s, the program was implemented in Central District 1 and 2 (1,202,000 m²) as a post-war restoration project.

The 1960s & 1970s: Advancement of the Land Readjustment Program

In Seoul, the Land Readjustment Program reached its peak in the 1960s and 1970s. In the 1960s, the program expanded to include 20 districts (63,674,000 m²) for both 5-Year Economic Development plans and development of new built-up areas. In the 1970s, the program was implemented in 14 districts (49,650,000 m²). If housing site development¹ prior to 1962 was conducted on the premise that detached houses would be built pursuant to the Joseon Town Planning Ordinance, the site development programs that followed were done as part of the Land Readjustment and the Residential Site Development programs, thanks to relevant laws and institutional framework such as the Urban Planning Act and the Land Expropriation Act of 1962. During this period, residential areas occupied by detached houses – such as 100,000 Hwagok Complex of (1965) – were developed sporadically, while some large apartment complexes – Mapo Apartment (1961) and Civil Servant Apartment (1966, Hangang Apartment) in Dongbu, Ichon-dong – were also developed as part of the government's pilot program.

In the 1960s, the government also announced a policy to supply housing (mostly apartments) to enhance the efficient use of land in large city areas. In the 1970s, Hangang Mansion (1970, LH apartment), Yeouido Pilot Apartment (1970, City of Seoul), and other apartment complexes built by the public sector for the middle class became immensely popular, further encouraging similar policies to follow. In 1972, the Housing Construction Promotion Act² and the Act on Temporary Measures for Development Promotion in Specific Areas³ were passed to assist with construction of private housing and to involve private housing construction companies in the Gangnam area in development of Seoul, respectively. These two Acts⁴ accelerated private

1. A land readjustment plan based on the Joseon Town Planning Ordinance was actively pursued by 1936 by Gyeongseongbu. However, new site development virtually came to an end due to the chaos of the time that followed Korea's liberation from Japanese colonial rule in 1945 (US Army Military Government and the Korean War). Any efforts that were taken stopped short of building houses for rescue and rehabilitation within the program area designated before Korea was liberated.

2. Enacted in 1972, the Housing Construction Promotion Act reflected the details for private sector-led housing policy, a trend which was reinforced in the 1970s. Immediately after the Yushin Reforms, a 10-year plan to build 2.5 million houses was announced in October 1972, and the Act was one measure to support the 10-year plan. It sought to provide access to public housing funds for private developers to encourage the private sector to be involved in the policy in an organized manner. With its enactment, the Public Housing Act of 1963 was repealed. Since then, the concept of public housing changed to include housing supplied by the public sector as well as the private.

3. The Land Readjustment Program for Yeongdong District 1, initiated alongside the construction of Gyeongbu Highway in 1968, was pursued as part of the Gangnam development policy, to disperse the population of Seoul. The program scope was expanded to cover Yeongdong District 2 (1970) and Jamsil District (1974). However, economic slowdown in the early 1970s put up roadblocks to Yeongdong development. The government passed and implemented the Act on Temporary Measures for Development Promotion in Specific Areas to support the economy and Yeongdong development, mainly through tax relief and granting priority access to the housing construction fund to site developers and construction companies targeting Yeouido and Gangnam. It was designed to be in effect only until December 1975 but was extended to December 1978.

4. In the early 1970s, Seoul had difficulties selling the land developed from construction projects in Yeouido and on the banks of the Han River. The city had to provide incentives to housing construction companies to buy the land, and even ordered them to purchase it. To compensate construction companies for losses from the Gyeongbu Highway project, the land from the Han River embankment project was developed and sold by the association of these construction companies (Gyeongin Development). It was purchased by the Land Corporation and became the site of apartment complexes. This is today's Banpo area. Much of the Hyundai Apartment complex in Apgujeong-dong was given to Hyundai Construction, also a participant in the embankment project.

development of apartment complexes in and around Yeongdong. Most of the housing site development around this time was based on the Land Readjustment Program Act. This Act was modified to allow for development of apartment complexes in detached housing areas. In December 1975, the Land Readjustment Program Act was revised to designate group sites to secure land for apartment construction. In January 1976, the Apartment District System⁵ was introduced to allow the addition of districts for apartment construction on top of the ones specified in the Urban Planning Act, to require developers to build apartment complexes.⁵ With this change, most residential areas began to see apartments rise, mostly centered in the Gangnam area. This development of Gangnam fueled speculation in the property market. Accordingly, the need for more housing sites and housing grew. By December 1977, the Housing Construction Promotion Act had been completely revised, providing a legal basis for housing site development. In 1979, rules on housing construction were set forth to regulate installation of facilities within the residential complex. This subordinate law was put in place to control the quality and level of facilities in complexes built by private developers.

1980s: Reduction of the Land Readjustment Program

In the 1980s, speculation began to create serious problems in terms of housing affordability. Replaced by a new public development plan, the Land Readjustment Program was only conducted on a limited scope in 5 districts (14,541,000 m²), including Gangdong, Gaepo, Garak and Yangjae.

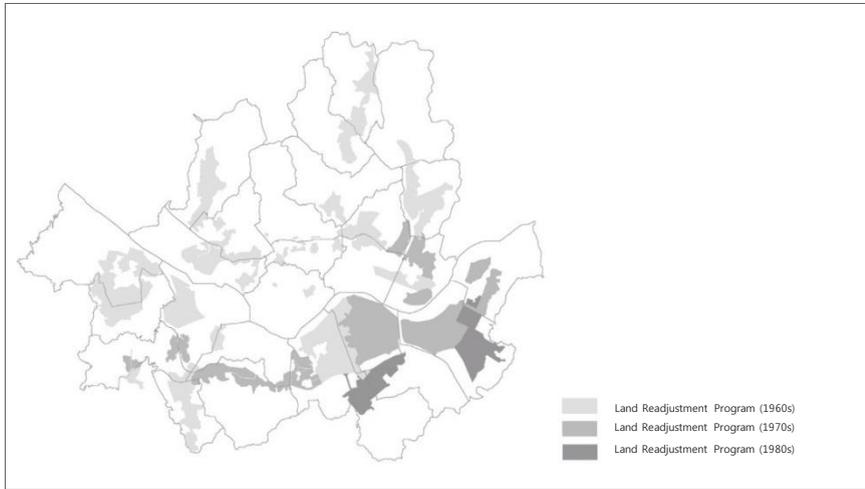
Figure 1 - Characteristics of the Land Readjustment Program by Period

	1960s	1970s	1980s
· The number of districts implemented	· 20	· 14	· 5
· Total land area	· 63,673,800 m ²	· 49,650,100 m ²	· 14,541,300 m ²
· Average district area	· 3,183,700 m ²	· 3,546,400 m ²	· 2,908,300 m ²
· Average percentage of public lots	· 28.4%	· 30.0%	· 47.5%
· Average land reduction rate	· 31.6%	· 43.7%	· 55.0%

The number of districts (and total land area) where the program was implemented was highest during the 1960s, but average district area was the largest in the 1970s. In the 1980s, the number of programs was reduced, but the average percentage of public lots and the average land reduction rate were much higher than in previous decades. The increasing size of public land over time can be explained by the fact that the program entities allowed more land for infrastructure, such as roads, parks, waterworks and sewer lines.

5. The apartment district system was introduced to utilize land to most efficiently and establish public facilities. After the system was legislated, 11 districts (229 ha) were designated in Jamsil, Banpo, Apgujeong and other areas in August 1976. A total of 14 districts had been designated by 1979.

Figure 2 - Land Readjustment Program Districts in Seoul by Period



Changes in the Size of Districts in the Land Readjustment Program by Year

By decade, the average district area of the Land Readjustment Program was 3,183,700 m² in the 1960s, 3,546,400 m² in the 1970s, and 2,908,300 m² in the 1980s. The larger areas were preferred as larger facilities boosted the economy and reduced program costs. However, the increasing amount of land to be readjusted and of the rights holders created an issue with replotting and resulted in longer construction periods.

Figure 3 - Size of Districts in the Land Readjustment Program by Year (Approved Programs)

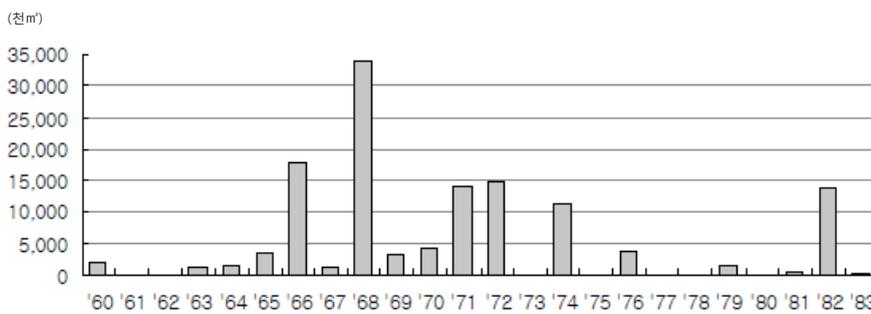


Table 1 - The Land Readjustment Program in Seoul

	District Name	Date Designated	Date Approved	Area (1,000 m ²)	Percentage of Public Lots (%)	Land Reduction Rate (%)	Program Cost (KRW 1 million)	Remarks
1960s	Seogyo	'57.7.8	'60.7.13	1,723.00	30.5	25.7	224	City of Seoul
	Dongdaemun	'60.2.8	'60.9.29	267.1	32	30	52.3	City of Seoul
	Myeonok	'62.3.5	'63.2.5	1,101.50	24.4	29.1	170	City of Seoul
	Suyu	'61.1.11	'64.10.16	1,393.90	26.7	24.9	200	City of Seoul
	Bulgwang	'61.1.11	'65.10.7	1,189.80	28.3	24.8	185	City of Seoul
	Seongsan	'63.3.8	'65.11.8	2,246.10	29.2	33.8	340	City of Seoul
	Dokdo	'61.1.11	'66.1.21	1,354.00	25.3	25.6	275	City of Seoul
	Yeonhee	'66.5.26	'66.1.21	806.1	23.1	34.2	263	City of Seoul
	Changdong	'66.7.1	'66.1.21	2,793.10	26.3	30.2	556.3	City of Seoul
	Yeokchon	'66.7.1	'66.1.21	4,344.50	35.2	34.4	911	City of Seoul
	Hwayang	'66.5.10	'66.1.21	2,110.50	20.7	26.6	273	City of Seoul
	Mangwu	'66.5.10	'66.1.21	6,450.60	29.2	30.6	1,340.00	City of Seoul
	Hwagok	'66.11.24	'67.3.10	1,025.10	28.1	32.2	858.7	Korea Housing Corporation
	Gyeongin	'66.12.28	'68.1.8	6,918.70	27.4	32.9	1,723.00	City of Seoul
	Yeongdong 1	'66.12.28	'68.1.8	12,737.80	41.8	39.1	4,725.00	City of Seoul
	Gimpo	'66.12.28	'68.1.23	4,706.40	27.3	31	1,274.80	City of Seoul
	Siheung	'66.12.28	'68.1.23	5,746.20	26.3	30.8	1,249.00	City of Seoul
	Dobong	'66.12.28	'68.1.23	2,661.60	32.9	36.3	521.3	City of Seoul
	Gaebong 1	'68.5.14	'68.7.18	959.7	28.8	44.4	968.5	Korea Housing Corporation
	Junggok	'67.8.10	'69.10.1	3,138.10	23.7	34.9	1,356.70	Union
Subtotal (20)			63,673.80	28.4	31.6	17,478.60		
1970s	Gaebong 2	'70.3.11	'70.5.25	1,030.80	28.3	55.1	1,275.30	Korea Housing Corporation
	Shillim	'66.12.28	'70.9.3	3,420.00	33	33.1	1,447.00	City of Seoul
	Yeongdong 2	'66.12.28	'71.8.24	13,071.90	27.2	36.8	10,683.00	City of Seoul
	Jamsil	'71.5.5	'74.12.6	11,223.20	41	52.9	10,100.00	City of Seoul
	Yeongdong 1 (additional)	'71.5.5	'71.12.28	991.7	31.8	39.8	983.2	City of Seoul
	Hwayang (additional)	'71.11.26	'72.3.28	1,522.40	29.4	38.5	617	City of Seoul
	Cheonho	'66.12.28	'72.11.6	2,621.60	27.3	35.1	4,000.00	City of Seoul
	Shillim (additional)	'71.5.5	'72.11.6	2,006.60	29.5	32.8	1,400.00	City of Seoul
	Yeongdong 2 (additional)	'71.11.26	'75.2.14	85.4	21.9	39.5	92.6	City of Seoul
	Heungnam	'71.3.10	'72.2.9	556.4	22.7	50.1	577	Union
	Isu	'71.4.8	'72.2.18	8,028.30	23.2	39.4	3,159.20	Union
	Amsa	'75.1.18	'76.4.22	1,697.10	29.4	50.4	3,400.00	City of Seoul
	Janganpyeong	'75.1.18	'76.6.25	1,933.10	33.6	53.8	5,944.30	City of Seoul
	Guro	'77.1.31	'79.3.29	1,461.60	41.4	54.4	18,650.00	City of Seoul
Subtotal (14)			49,650.10	30	43.7	62,328.60		
1980s	Isu (additional)	'79.9.21	'81.4.10	76.6	42.7	53.3	6,937.20	Union
	Gangdong	'80.5.20	'81.4.10	363.6	40.6	53	4,600.00	City of Seoul
	Gaepo	'81.4.11	'82.2.18	6,491.30	62.1	57.34	128,229.00	City of Seoul
	Garak	'80.7.2	'82.3.20	7,455.10	60.7	68.3	112,995.00	City of Seoul
	Yangjae	'83.3.11	'83.11.22	154.7	31.3	43.1	5,147.30	City of Seoul
Subtotal (5)			14,541.30	47.5	55	257,908.50		
Total				127,865.20	31.4	38.9	337,715.70	

Limitations & Development

Because the Land Readjustment Program usually supplied sites for detached housing, it did not alleviate the housing shortage caused by rapid urbanization at the time. There was a growing need for extensive sites for housing to respond to the population boom, with a strong institutional framework to control land development as there was a problem of privatizing development profits. In response to these needs, the Housing Site Development Promotion Act was passed in December 1980, under which the public sector was able to take a leading role throughout the stages of acquiring, developing, supplying and managing the housing sites. In January 2000, various urban plans and development programs regulated by the Urban Planning Act were integrated into the Urban Development Act, and the Land Readjustment Program also changed to urban planning through replotting.

Achievements & Challenges

The Land Readjustment Program was an approach suitable to built-up area development when financing was insufficient in the early days. Nearly half of the already-developed area was developed to supply land and lots for public use and accommodate the waves of people moving into the city. By the end of the 1960s, the program was implemented all over Gangnam, dispersing the population away from Gangbuk.

Deterioration of Detached Housing & Growing Demand for Reconstruction

The Land Readjustment Program offered replotting as compensation, which pushed up the percentage of detached houses and created a problem of development profit privatization. Moreover, real estate prices grew in the process of selling replotted land, with demand increasing for lots for public use. By the end of the 1980s, the program transitioned into the Housing Site Development Program based on public development. Currently, all Land Readjustment Program districts, including the Yangjae district, (the last program, designated in 1983), are 20 years old and older. The land remains low-rise and low-density due to the program, and thus demands for reconstruction are steadily rising.

Reconstruction Requirements for Detached Housing Sites

The reconstruction program for detached housing sites applies to areas with 200 or more detached houses or are 10,000 m² or more in area, and should meet the following requirements:

- _ The existence of sufficient infrastructure such as roads in the area and no need for additional infrastructure in adjacent areas, or the program entity will pay for construction of additional required infrastructure;
- _ Old, deteriorating buildings in the area account for half to two-thirds of the total, and at least three-tenths of the multi-household and multi-unit buildings are 15 years or older.

_ Source: Ministry of Construction & Transportation, 2004,

_ Guidelines for Reconstruction of Detached Housing Sites

Lack of Infrastructure

The introduction of new types of housing – multi-household and multi-unit buildings in 1984 and 1990 – quickly multiplied the number of households in the Land Readjustment Program areas. Most areas however lacked parking lots and other infrastructure along with narrow alleys ways. The demands for systematic management plans increased.

Mixed Use

In many regions, community facilities were set up in residential areas, giving rise to a mixing of commercial facilities and detached houses. The increasing number of community facilities within the general residential areas complicates the categorization necessary for urban planning and degrades the living environment, making it necessary to review the facilities being allowed for commercial use.

Table 2 - Use of Community Facilities in Residential Areas

Category	Allowed Use	Remarks
Class 1 General Residential Area	Class 2 Community Facilities (Excluding bars and massage parlors) Religious assembly facilities, chanel house (in the religious assembly facilities), zoo or botanic garden (cultural assembly), educational facilities, research facilities, youth hostel (training facilities), exercise facilities, parking lot	Enforcement Decree of the Construction Act Refer to Attachment 1 · 4.
Class 2 General Residential Area	Class 2 Community Facilities (Excluding bars and massage parlors) Performance hall, assembly hall, retail shops, medical clinic, broadcasting and communications facilities, generator facilities, education, research facilities, public service facilities from business facilities, financial business branch/office, storage, parking lot, carwash, generator facilities, military facilities, storage and treatment of dangerous materials (petrol station, pressurized gas charging station and storage)	Enforcement Decree of the Construction Act Refer to Attachment 1 · 5.
Class 3 General Residential Area	Class 2 Community Facilities (Excluding bars and massage parlors) Performance hall, assembly hall, retail shops, medical clinic, broadcasting and communications facilities, generator facilities, education, research facilities, business facilities, exercise facilities, training facilities, storage, factory, parking lot, carwash, generator facilities, military facilities, prison, storage and treatment of dangerous materials (petrol station, pressurized gas charging station and storage)	Enforcement Decree of the Construction Act Refer to Attachment 1 · 6.

Note: Class 3 General Residential Area is similar to Class 1 and 2 in allowed use, but differs in floor area.

Source: Urban Planning Ordinance of Seoul, Chapter 8, Section 1

Increase of Residential-Commercial Buildings

Residential-commercial buildings were built in concentration in the central commercial areas, such as at area or district centers, resulting in a shortage of business facilities and other facilities. This was because since 1994, residential facilities in residential-commercial buildings were easily excluded from the requirement for plan approval when certain conditions were met, and regulations on residential-commercial buildings located in the commercial areas were steadily eased. From 1999, large houses of less than 297 m² were allowed and construction was permitted for up to 90% of the total area.

Table 3 - Changes to the Residential-Commercial Building System

	Residential Facilities Excluded from Requirement for Plan Approval	Facilities Allowed to be Built in Multi-unit Residential Buildings	Allowed Floor Space Ratio
1982.5	-	· Community facilities, business facilities, sale facilities	-
1989.9	-	· Community facilities, business facilities, sale facilities, social welfare center	-
1994.7	· Average net area: up to 150 m ² · Less than 50% of total area · Less than 200 households	· Same as above	-
1995.1	· Average net area: up to 150 m ² · Less than 70% of total area	· Same as above	-
1998.4	· Average net area: up to 150 m ² · Less than 90% of total area	· Same as above	-
1999.12	· Maximum net area: less than 297 m ² · Less than 90% of total area	· Same as above	-
2000.7	· Same as above	· Same as above	· Central commerce: 800%/1,000% · General commerce: 600%/800% · Community commerce: 600%

Source: Article 32, Enforcement Decree, the Housing Construction Promotion Act, Article 4, Rules on Housing Construction Standards, Attachment 2, Urban Planning Ordinance of Seoul.

Shortage of Public Lots & Reduction of Lot Size

To pay for the program and secure public lots without financial assistance, lot size reduction⁶ inevitably increased. The average percentage of public lots also gradually decreased: 28.4% in the 1960s, 30.0% in the 1970s, and 47.5% in the 1980s. Lot size reduction increased accordingly to 31.6%, 43.7%, and 55.0% for the respective decades. Due to the resistance of landowners and the percentage of public lots decreased in many districts, which led to deteriorating quality in terms of space.

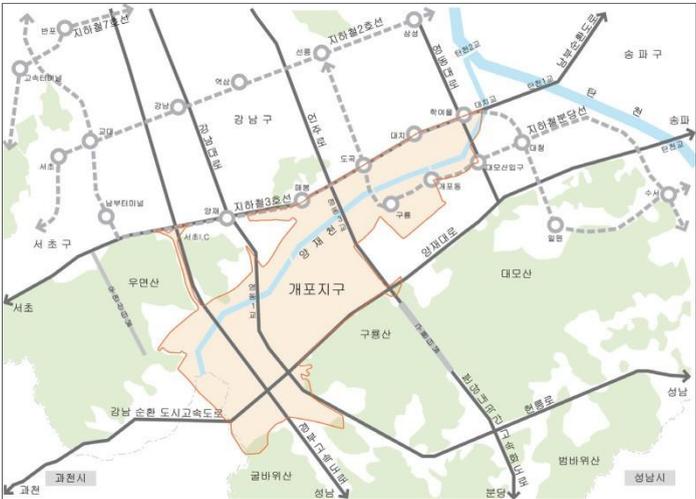
6. Lot size reduction: Land that has been expropriated for use as public lots for construction under the Land Readjustment Program. If the entity cannot finance construction on these lots, then the land is not sold but is replotted (lot size is reduced) in areas where the conditions are almost identical to the original

Case: Gaepo District 3

Outline

Gaepo District is located 13 km to the southeast of the city center. It once belonged to Gwangju-gun, Gyeonggi Province but was absorbed by Gangnam-gu, Seoul after adjustment of the administrative districts. It spans across Daechi-1-dong, Daechi-2-dong, Gaepo-4-dong, Dogok-2-dong (Gangnam-gu) and Yangjae-2-dong (Seocho-gu) and is easily accessible via Subway Line 3 and the new Bundang Line.

Figure 4 - Gaepo District Surroundings



Designation of the Land Readjustment Program Districts

Gaepo District was originally designated as part of the Land Readjustment Program by the City of Seoul in January 1968 and some of it was replotted. However, the program was canceled due to the Green Preservation Plan in June 1978. In April 1981, the Ministry of Construction designated the district while implementing the Land Readjustment Program Act. The site development program in Gaepo District aimed to supply extensive sites to build 5 million houses, the plan for which was launched to address the housing shortage issues in the early 1980s pursuant to the Housing Construction Promotion Act.

To alleviate the lack of sufficient urban infrastructure and traffic congestion in Seoul, the government sought to disperse the population away from the Seoul metropolitan area and contain growth in the CBD. It focused on developing Gangnam so as to divert the urban functions from Gangbuk to Gangnam. Gaepo was then planned as the next new "downtown" for Seoul. By developing this district, Seoul attempted to address the housing shortage and promote balanced urban development.

Table 4 - Gaepo District Development History

	Detail	Remarks
Dec. 1980	· Change in intended use of part of Yangjae District and application for Land Readjustment Program plan	
Jan. 1981	· Change in intended use of part of Yangjae District and cancellation of application for Land Readjustment Program plan	
Apr. 1981	· Gaepo District designated for housing site development	· Notice #113 of the Ministry of Construction
Jul. 1981	· Basic Urban Development Plan established for Gaepo District	
Sep. 1981	· Notification of changes to the site development plan for Gaepo District	· 8,460,000 m ² (2,559,000 pyeong)
Nov. 1981	· Approval of the site development plan for Gaepo District	
Feb. 1982	· Changes to the Gaepo District 3 development plan and approval for action plan · Implemented as part of the Land Readjustment Program	· Notice #76 of the Ministry of Construction · 6,618,000 m ² (2,002,000 pyeong)
Mar. 1982	· Public notice of replotting plans for the Land Readjustment Program district in Gaepo	
Sep. 1983	· Approval for development plan changes and action plan for Gaepo District 3	· Notice #296 of the Ministry of Construction
Sep. 1983	· Approval for replotting plan and designation of planned replotting area	· Notice #534 of the City of Seoul
Jun. 1985	· Approval for changes to development plan and action plan	· Notice #25 of the Ministry of Construction
Feb. 1987	· Approval for changes to replotting plan and designation of planned replotting area	· Notice #116 of the City of Seoul
Dec. 1988	· Construction completed and replotting plan changed / Notification of replotting confirmation	· Notice #992 of the City of Seoul
2002	· District unit plan established for Gaepo area in Gangnam-gu	· Multi-unit housing area
2004	· District unit plan established for Yangjae area in Seocho-gu	

Source: Seoul Metropolitan Government, 1990, White Paper on Seoul Land Readjustment.

Implementation of the Land Readjustment Program

While designating districts for site development, the Ministry of Construction divided Gaepo District into 3 areas, with one area each to be developed by the City of Seoul (5,983,000 m²), the Korea Land Corporation (1,818,000 m²), and the Korea Housing Corporation (602,000 m²). In 1981, land to be developed in all 3 districts was to be expropriated, but this changed due to the Land Readjustment Program in February 1982. Gaepo District 1 and Gaepo District 2 were thus developed as part of the public development approach by the Korea Land Corporation and the Korea Housing Corporation, while Gaepo District 3 was developed by the City of Seoul based on the Land Readjustment Program. Seoul divided Gaepo District 3 into 2 areas: the east was for multi-unit houses, while the Yangjae area in Seocho-gu and other parts were developed as part

of the Land Readjustment Program.

After construction was completed, an issue was raised on the Land Readjustment Program in Gaepo District 3. It was the only place in the site development program area where the land was replotted as per the land readjustment method, which was in violation of the Housing Site Development Promotion Act. In site development program districts, land readjustment was only allowed on “confirmed areas targeted by the Land Readjustment Program” and “areas where land prices are higher than in designated districts in the vicinity, making it impossible to develop the site otherwise.” Neither of these criteria applied to Gaepo.

Table 5 - Changes in the Gaepo District
(Unit: 10,000 m²)

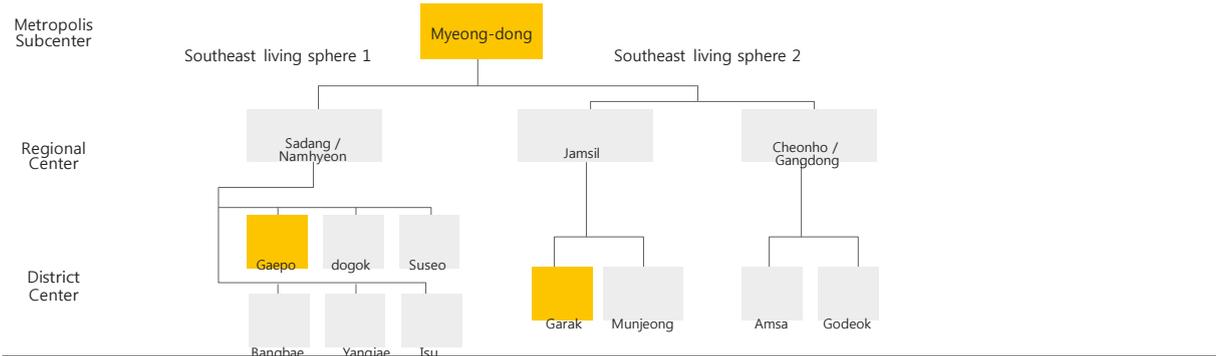
Period	Gaepo District 1 (Korea Land Corporation)	Gaepo District 2 (Korea Housing Corporation)	Gaepo District 3 (City of Seoul)	Total
Apr. 1981	1818	60.2	598.3	840.3
Sep. 1981	213.2	33.1	599.7	846.0
Nov. 1981	213.2	35.0	675.6	923.8
Feb. 1982	213.7	35.0	661.8	910.5
Sep. 1983	213.7	35.0	645.1	893.8
Feb. 1987	213.7	35.0	649.4	898.1

Source: Seoul Metropolitan Government, 1990, White Paper on Seoul Land Readjustment

Basic Features of the Site Development Plan for Gaepo

The purpose of the plans for Gaepo District 3 was to create idyllic residential areas and an advanced streetscape, allow for development to meet cultural and consumer needs, and enable private development by providing public programs and infrastructure. Based on the neighborhood unit theory, a “daily living sphere” was formed, which was hierarchically structured to complete the total spatial structure. The total spatial structure was made up of 4 stages – local center, district center, neighborhood center, and neighborhood precinct.

Figure 5 - Structure of the Basic Seoul Urban Plan 2020



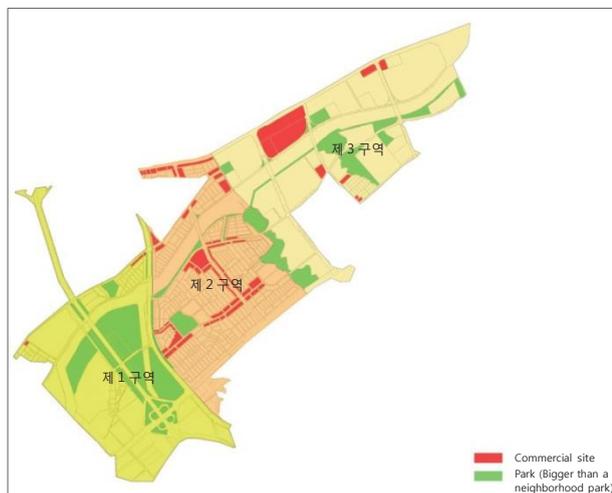
Gaepo District 3 was an early Korean model of the neighborhood unit theory. It was a relatively strict concept of household unit complex, but some parts were more street-oriented.

Evaluation

Characteristics of the Plan: Separation of Detached Housing & Multi-Unit Dwelling Areas

Gaepo District 3 was divided into 3 districts: District 1 with large parks, detached housing and a commercial distribution area near the highway; District 2 with detached housing only; and District 3 with multi-unit dwellings. District 2 saw the most change of the 3 parts.

Figure 6 - Urban Design by District in Gaepo District 3 (1985)



Detached Housing Area: Transition to Multi-Household/Unit Dwellings & Increased Community Facilities

Detached housing in the area was mostly changed to multi-household/unit dwellings and the number of community facilities increased, weakening the residential function of the area but strengthening its commercial functions. Of the existing units, 17.5% are 20 years or older while 66.1% are 10 to 20 years old. There is no concentration of deteriorating houses that are 20 years old or more because most were changed to multi-household/unit dwellings. For the same reason, the unit density of the detached housing area is high, standing at 197 households/ha. However, the sections adjacent to roads measuring 6m or longer are quite good at 70%, with no lot smaller than 90 m². The parking issue is serious however, with about 0.49 spaces per household.

Table 6 - Changes to Land Use in Gaepo District 3

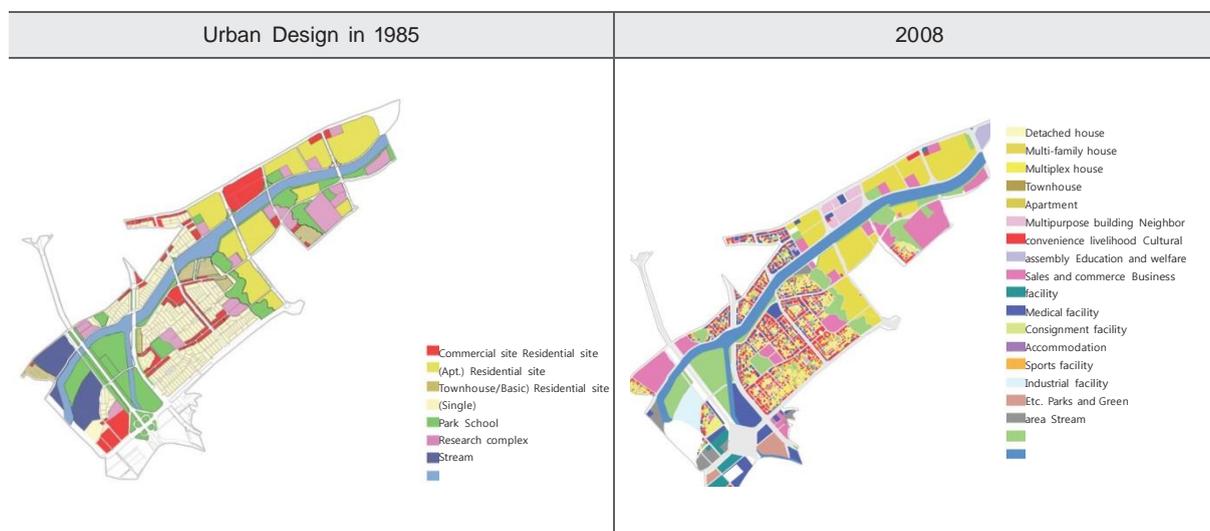


Table 7 - Land Use in Gaepo District 3

Category	Residential						Com-merce	School	Park, Green Space	Other	Total
	Detached Housing	Multi-Unit Housing	Multi-House-hold Housing	Town-houses	Apart-ments	Residen-tial-Com-mercial					
Per-centage against Urban Design (%)	15.9	-	-	2.8	14.7	-	7.1	5.9	12.7	41	100
	33.4										
Current Percentage (%)	0.2	3.3	2.2	1.1	13.4	1.6	13.7	6.5	11.2	46.8	100
	21.8										

Note: The current percentages are based on site investigation and GIS analysis.

Multi-Unit Dwellings: All 20 Years or Older

Large and medium complexes are the most numerous, with 37.4% of complexes housing between 300 and 1,000 households, and 24.9% housing more than 1,000. There are 18 complexes; all but one are 20 years old or more. By size of housing unit, those up to 60 m², between 60 & 85 m², and larger than 85 m² account for 21.6%, 21.4%, and 57.0% respectively, with some 80% being designated as "medium to large". In terms of the floor space ratio, 72.2% of the 18 complexes are 200% or less; density is relatively low due to the buildings' linear arrangement as well as the distance between buildings. Household density is 150/ha in 10 buildings, in 55.5% of the total. The available parking spaces per household equal 1 or more, but actual investigation revealed that 90% of the complaints were about parking.

Table 8 - Changes in Residential Type in Gaepo District 3

(Unit: %)

Residential Type (2008)		Detached	Multi-unit/ household	Townhouse	Apartment	Total
Area Percent- age	Detached House	2.9	72.9	16.6	7.6	100.0
	Townhouse	1.9	79.7	14.5	3.9	100.0

Commercial Center: Dominant Residential-Commercial Buildings

To ensure the self-sufficiency of Gaepo District 3, the following areas were designated as commercial areas: 1 local center; 2 district centers; and 7 neighborhood centers. The Asian financial crisis however encouraged the construction of residential-commercial buildings, which take up the largest area (50.7%) in the commercial area.

Table 9 - Changes in Local Centers in Gaepo District 3

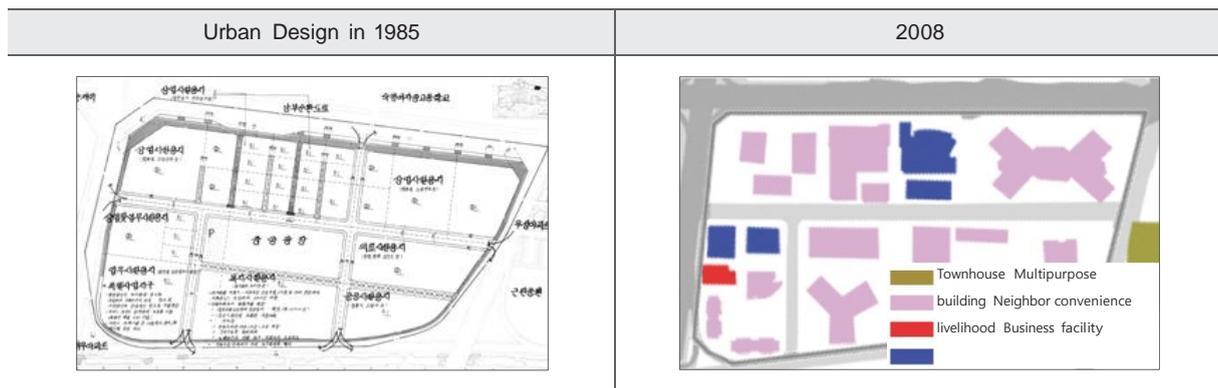


Table 10 - Changes in District Centers in Gaepo District 3

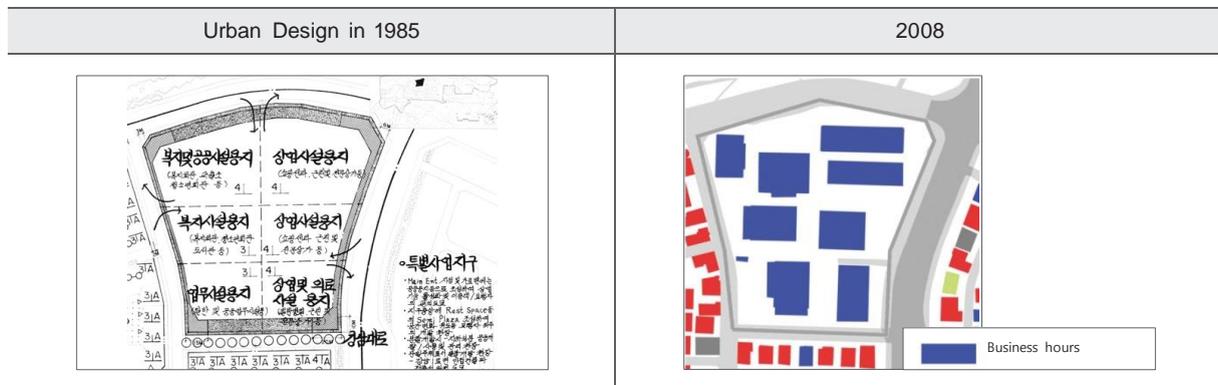


Table 11 - Changes in Neighborhood Centers in Gaepo District 3

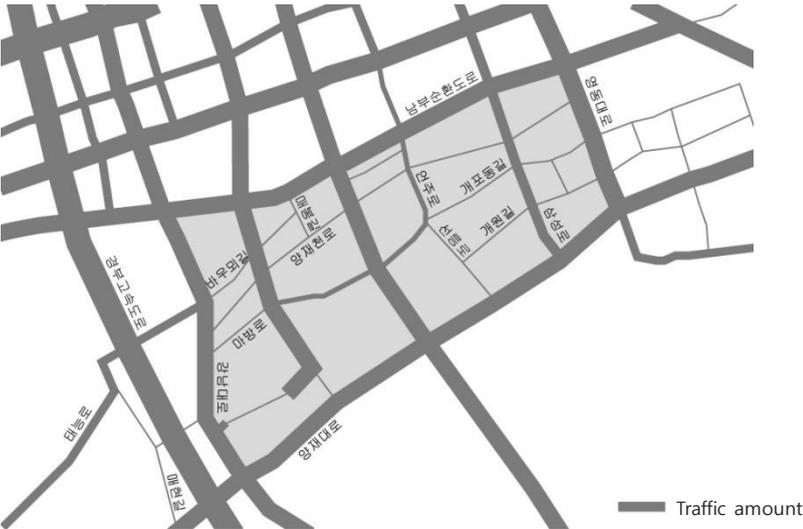
Urban Design in 1985	2008

Currently, the local centers are mainly occupied by residential-commercial buildings such as Tower Palace. The neighborhood centers were originally designed to be the center of the living sphere and to accommodate commercial facilities and amenities, but today, only 4 neighborhood centers have a gu-district community center, commercial facilities, post office and the like. In the other 3 neighborhood centers are business facilities, an unauthorized slum area (Sujeong Village), and apartments, altering the originally intended function since sale of the area was more time consuming than expected. As for local centers, 37.4% were sold 7 years after initially offered, with 83.8% sold today.

Transportation: Controlled Traffic on Nearby Arterial Roads

Created by the Land Readjustment Program, Gaepo District 3 has a regularly planned landscape, mobility (except for pedestrian mobility), accessibility, flexibility to growth and change, and an excellent grid road network that can adjust to overpopulation or concentration. Traffic is concentrated on the major arterial roads such as Gangnam Avenue and Yangjae Avenue, Eonju-ro connected to Seongsu Bridge, and the Nambu Beltway connecting east and west. On most main roads, traffic volume exceeds capacity at peak hours, at a congestion rate of higher than 1.0. Travel on the main roads in Gangnam-gu is significantly slower in the afternoon than in the morning because of the concentration of large business and commercial facilities around Gangnam Avenue and Tehran-ro where traffic volume grows in the afternoon. The total number of people in Gangnam-gu is decreasing, but the number of registered vehicles in Gaepo District 3 grew from 29,000 in 2006 to 42,000 in 2012 and is expected to grow further. Even in Gangnam, Gaepo District 3 has the highest traffic density, and the redevelopment and reconstruction programs will further increase traffic volumes

Figure 7 - Road Network & Traffic Volume in Gaepo District 3



Summary

The Land Readjustment Program was carried out by an association of land owners and sites supplied for detached houses via replotting-based compensation. However, the program did not improve the housing shortage much, and replotting came with undesired side effects, such as privatization of development profits and rising land prices. Demand for multi-unit dwelling sites continued to grow, and the Land Readjustment Program had to come to an end in the late 1980s. Since passage of the Housing Site Development Promotion Act in December 1980, the public sector was actively involved throughout each stage of acquisition, development, supply and management of the sites.

The Land Readjustment Program, devised to respond to rapid urbanization in the 1980s, was designed to supply the required sites while minimizing the financial burden on the public sector. In program districts that are 20 years old or more, there is a need for remodeling, reconstruction and other types of improvement. The Program does have some historical significance in Seoul's urban plans of the past. It will be necessary to conduct a comprehensive evaluation in terms of the functions and roles of a large-scale development program from the point of view urban planning and socioeconomics before improvement programs are implemented in earnest.

Table 12 - Comparison: Land Readjustment Program, Urban Development Program & Site Development Program

Category	Land Readjustment Program (Urban Development Based on Replotting)	Site Development Program	Urban Development Program
Purpose	Enhance the efficiency of land use. Improve public facilities.	Resolve urgent housing shortages.	Develop a city that serves composite functions
Legal Basis	Land Readjustment Program Act	Housing Site Development Promotion Act	Urban Development Act
Program District	Land Readjustment Program Districts	Site Development Program Sites	Urban Development Sites
Program Entity	Association of landowners Central/local government Korea Housing Corporation Korea Land Corporation	Central government, local government organizations Korea Land Corporation Korea Housing Corporation Local public corporations and private-public partnerships	Central government, local government organizations Joint ventures Landowners or landowner associations
Method	Replotting	Full purchase	Full purchase, replotting, or both
Land Supply	Replot after reducing lot size	Supply to construction companies at cost or less	Dependent on program method

Financing	By landowner	By program entity	By indirect government assistance By program entity
Infrastructure	Unclear as to who is responsible for construction	Unclear as to who is responsible for construction	Clearly specifies who is responsible for construction
Development Profits	Privatization of development profits	May be returned to society	May be returned to society
Development Type	Low-density, low-rise	High-rise, high-density	High-rise, high-density
Advantages	No burden of investment	Supply of affordable sites Social contribution of development profits Advantageous for systematic development and efficient land use	Development of a city with composite functions Private sector participation Percentage of contribution to infrastructure is clearly specified
Disadvantages	Program prolonged due to conflicts between owners Cause for rising land prices and real estate speculation	Complaints from original landowners Excessive financial burden on program entity Increase in money supply to area due to extensive compensation for land → rising land prices in vicinity and more speculation	Limited number of program sites Difficult for private investors to secure program sites

Source: Won Dong-il, An Hyeong-sun, Gang Jun-mo, 2005, "Comparative Analysis: Changes in the Land Policies and Site Development Systems of South Korea and China", Korea Planners Association 2005 Symposium (11.4~5) Collection p.432.

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