KNOWLEDGE SHARING PROGRAM

2011 Modularization of Korea's Development Experience:

Korean Version of New Town Development

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MLTM
Ministry of Land, Transport and Maritime Affairs

KRIHS Korea Research Institute for Human Settlements

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Preface

The study of Korea's economic and social transformation offers a unique opportunity to better understand the factors that drive development. Within one generation, Korea had transformed itself from a poor agrarian society to a modern industrial nation, a feat never seen before. What makes Korea's experience so unique is that its rapid economic development was relatively broad-based, meaning that the fruits of Korea's rapid growth were shared by many. The challenge of course is unlocking the secrets behind Korea's rapid and broad-based development, which can offer invaluable insights and lessons and knowledge that can be shared with the rest of the international community.

Recognizing this, the Korean Ministry of Strategy and Finance (MOSF) and the Korea Development Institute (KDI) launched the Knowledge Sharing Program (KSP) in 2004 to share Korea's development experience and to assist its developing country partners. The body of work presented in this volume is part of a greater initiative launched in 2007 to systemically research and document Korea's development experience and to deliver standardized content as case studies. The goal of this undertaking is to offer a deeper and wider understanding of Korea's development experience with the hope that Korea's past can offer lessons for developing countries in search of sustainable and broad-based development. This is a continuation of a multi-year undertaking to study and document Korea's development experience, and it builds on the 20 case studies completed in 2010. Here, we present 40 new studies that explore various development-oriented themes such as industrialization, energy, human capital development, government administration, Information and Communication Technology (ICT), agricultural development, land development and environment.

In presenting these new studies, I would like to take this opportunity to express my gratitude to all those involved in this great undertaking. It was through their hard work and commitment that made this possible. Foremost, I would like to thank the Ministry of Strategy and Finance for their encouragement and full support of this project. I especially would like to thank the KSP Executive Committee, composed of related ministries/departments, and the various Korean research institutes, for their involvement and the invaluable role they played in bringing this project together. I would also like to thank all the former public officials and senior practitioners for lending their time and keen insights and expertise in preparation of the case studies.

Indeed, the successful completion of the case studies was made possible by the dedication of the researchers from the public sector and academia involved in conducting the studies, which I believe will go a long way in advancing knowledge on not only Korea's own development but also development in general. Lastly, I would like to express my gratitude to Professor Joon-Kyung Kim for his stewardship of this enterprise, and to his team including Professor Jin Park at the KDI School of Public Policy and Management, for their hard work and dedication in successfully managing and completing this project.

As always, the views and opinions expressed by the authors in the body of work presented here do not necessary represent those of KDI School of Public Policy and Management.

May 2012

Oh-Seok Hyun

President

KDI School of Public Policy and Management

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Summary

A normative new town based on self-reliance is defined as a new town in a narrow sense. Meanwhile, new settlement developed in a planned manner can be regarded as a new town in a broad sense.

Koreas new town development was progressed in a functional pattern through the timely changes in the paradigm and process of urbanization.

First, the modern meaning of a Korean style new town construction was started in 1960s and 1970s through the industrial cities such as Ulsan and Pohang to lead the economic growth.

The second paradigm change was the period of supplying new homes to cope with housing shortage, and the best examples are the five new towns that are constructed in the 1980s and 1990s to supply insufficient homes.

Afterwards, since 2000, new towns that have multiple purposes such as accommodating of the administrative functions, construction of the company towns and the innovative cities.

Carry out system of such new towns are comprised of execution of policies in the public parts by the central government and project performer and the process of general participations in civilian parts such as private companies and residents. The shape of the city is materialized through process of selection of the land, basic conceptions, development plans, land sale and completion per plan and stages of the planning.

Korean type new towns are carried out on the basis of separate laws on the functional characteristics:

(New towns with industrial functions): Develops and carries out the national industrial complexes based on special laws of industrial location

(New towns with residential functions): Develops and carries out the new town development based on law on housing promotion act

(New towns with multiple functions): Develops and carries out based on the related laws of the separate projects such as Sejong City Special Law, Innovative City Development Act etc.

In order for a development of the new towns in a suitable time and place, sustainable urban development policy should be carried out in a futuristic way:

(Urban development as a preparation of the era of low population growth): In order to enhance the urban competitiveness, it needs to improve the quality of life of the citizens, and change the city into community space

(Urban Development carrying out new paradigm): There is a need of changes in policy methods that considers socioeconomic systems in general, there are needs of securing flexibilities that could accommodate paradigm of time

(Development of the commensal cities that seek general values): Seeking for a stable urban development, manage the growth in urban terms in a consolidated way, and in terms of urban inside, detailed policy goals such as restructuring of infrastructure is needed

Chapter 1

Introduction

1. Background

Introduction

1. Background

1.1 Economic Growth and New Town Development

1.1.1 Overview

For the last six decades, Korea has experienced very rapid urban growth. In the urbanization process, cities experienced severe urban sprawl in order to accommodate immigrants from rural areas, and this urban spatial expansion changed the urban lifestyle. This 'rapid urban growth' still exists in some urban areas now. Under these circumstances, urban development policies in Korea have developed as solutions or responses to various urban development issues that occurred in the urbanization process.

New city development policies have been implemented to achieve two main urban policy goals-developing national territory and finding solutions to problems in large cities. In the 1960s, under the leadership of President Chunghee Park[1] and his economic staffs,[2] Ulsan (1962) and Pohang (1968) were developed into industrial cities followed by the Korea Industrialization Master Plan and the 1st Economic Development Plan. Seongnam (1968) was developed as a settlement for immigrants from Seoul who lived in unregistered shantytowns, and Yeouido (1967) and Myoungdong (1968) were built as large-scale central

1 Junghee Park was a President of South Korea between 1963 and 1979. While carrying out his modernization road map, he played a major role in strengthening the Korean economy by transforming the light-manufacture-oriented industrial structure into heavy-industry-oriented one. Also, he is generally credited with playing a pivotal role in the development of South Korea's economy by shifting its focus to export-oriented industrialization (http://en.wikipedia.org/wiki/ Park_Chung-hee).

2 Hakryul Kim-He supervised Korea on its economic problems and issues for 10 years from 1962 to 1972. He also carried out the 1st five-year economic development plan and the 2nd five-year economic development plan successfully. Jeonryum Kim-He worked with President Park as his Chief Presidential Secretary for over 9 years. As a Minister of Commerce and Industry, he developed export promotion

business districts. In the 1970s, new cities were constructed to respond to change in external security environments as well as economic growth. The heavy and chemical industry policy implemented by President Chunghee Park's administration was suggested to overcome the light-manufacture-oriented industry structure. Based on the announcement of the heavy and chemical industry development, the government constructed Gumi (1973), Changwon (1977), and Yeocheon (1977) to promote the heavy and chemical industry and expand exports. Also, around the Seoul metropolitan area, Banwol (1977) was built to disperse polluter industries to other areas: Jamsil (1971) was built to disperse functions of the urban core; and Kwacheon (1979) for dividing some administration functions located in Seoul.

In the 1980s, Gaepo (1981), Godeok (1981), Mokdong (1983), Sangye (1985) new towns were built as large-scale residential districts, and Dunsan (1988) and Kyeryung (1989) new towns were developed in order to move some administrative functions located in Seoul to local areas. In the late 1980s, there was a rapid increase in the housing prices in Seoul, which emerged as a big social issue. As a solution, the government made a decision to build five new cities-Pyoungchon, Bundang, Ilsan, Sanbon, and Jungdong-in the capital area. These new cities were called "the first generation new city (1989~1996)."

The total development area of those five new cities was 50.1km^2, and about 292,000 residential units for 1.17 million people were accommodated to stabilize the housing market in the capital area. However, when there were a lot of disputes about the negative effects of the first generation new cities such as the excessive population concentration in the capital area, price increases, and severe traffic congestion, the government encouraged dispersed development and small-scale private development in semi-agricultural lands.

Nevertheless, semi-agricultural land development policies caused infrastructure shortages and unplanned, disorderly national territory development by accumulating small-scale development projects excessively around suburban areas of Yongin and Paju. To handle this issue, the government suggested a national territory development framework based on the 'planning first, develop later' principle and began to develop new city master plans which improved development and planning issues of the first generation new cities. These new cities are called the 'second generation new city (2001~present).

policies. He was also the person who was responsible for constructing a petrochemical complex in Ulsan. He also suggested a policy that industry complexes would be built by the government first and transferred to the private sector after completion. Deokwoo Nam-As a former professor and bureaucrat, he emphasized the importance of being a leader and leadership, and had a critical perspective on economic conditions and structures in Korea. In August 1969, he was appointed Minister of Finance and implemented a policy to get rid of vicious private loans. Also, as the Deputy Prime Minister from 1974 to 1978, he carried out very strong export-driven policies to support many export companies and raise in exchange rates and tried to revive the Korean economy with an induction of foreign capital. Woncheol Oh-He was a general manager of the defense industry and the heavy and chemical industry. In the 1st five-year economic development plan, he initiated policies in the chemical industry field. In June 1964, he played a major role in reforming the domestic industry structure into an export-oriented industry structure. One of projects he was involved in was the Ulsan petrochemical complex. He also suggested developing Changwon city as a central city of the defense industry and to manufacture localized tanks and self-mobilized artilleries for the Korean Army.

The government suggested 11 second generation new cities around the capital area (ex. Pangyo in Seongnam, Dongtan in Hwaseong, and Hangang in Kimpo etc.) and 2 cities in local areas (ex. Asan, Doan). The total development area of those 13 cities is 164km^2, and about 712,000 residential units are under construction or will be provided within the areas.

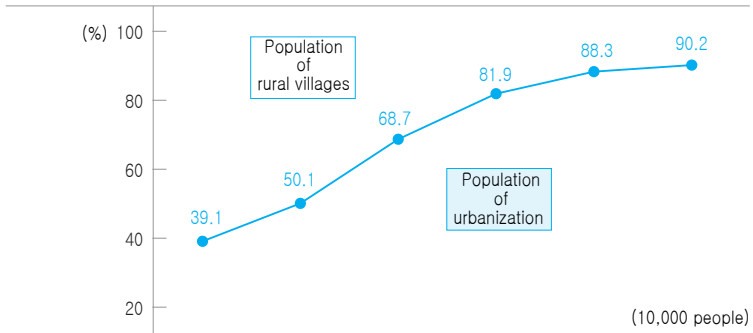
Table 1-1 | Change Process of New Town Construction (by period and by purpose)

Category		1960 1970 1980 1990	After 2000
New cities with industrial functions (industrial base)		Ulsan Pohang Gumi Changwon/Gwangyang Banwol/Yeocheon (1962) (1968) (1973) (1977) (1982)	
New cities to supply housing	Solving the housing problems in Seoul	Seongnam (1968) Bundang, Ilsan, Pyeongchon, Sanbon, Jungdong (1989) (1989) (1990)	New cities in phase 2 of the Seoul Metropolitan Area (Pangyo, Dongtan, Paju, etc.)
	Housing supply in the Seoul Metropolitan Area	Jamshil, Mokdong, Sanggye (1971) (1983) (1986)	
New cities with complex functions (New town, administration and innovation)		Ulsan Pohang Gumi Changwon/Banwol/ Yeocheon/Gwangyang (1962) (1968) (1973) (1977) (1982)	New town construction Administrative complex city Innovation city

The development of new towns in Korea is regarded as one of the means of implementing national territory development projects, such as the industrial complex formation to develop industrial infrastructure and construction of dams and satellite cities.

New cities began to be built in the late 1960s with two policy objectives: one is to build new towns as a hinterland city according to the developing industrial complexes, and the other is to build new towns to solve the overpopulation problem in cities.

Figure 1-1 | Trend of Urbanization in South Korea



Category \ Year	1960	1970	1980	1990	2000	2005
Total population	2498.9	3143.5	3744.9	4339.0	4796.4	4878.3
·Urban population	978.4	1575.0	2573.8	3555.8	4237.5	4398.2
· Rural village population	1520.5	1568.5	1171.1	783.2	557.9	480.1
Urbanization ratio	39.1	50.1	68.7	81.9	88.3	90.2

1.2 Concept and Development Background of Korean-Version New Towns

1.2.1 Concept of a New Town

The planning and construction of a new town are one of the oldest concepts throughout human settlement history. The new-town concept, a plan to be in line with modern urban functions, originated from the British "new community," which attempted to solve the urban problems arising from the industrial revolution. Following such efforts, the garden city theory of Ebenezer Howard (1902), who tried to share and integrate the merits of the cities in the industrial society and those of gardens, served as the turning point for establishing the concept of a contemporary new town.

Full-scale new town development was carried out globally as part of post-war recovery projects after World War II. Still, it was difficult to conclude the concept of a new town uniformly due to the various conditions and purposes of each country's new town development. Many scholars and research agencies at home and abroad have defined the concept of a new town as follows:

Robson (1967) defined a new town as one that is developed into a self-reliant city including housing and other recreation facilities, unlike a large city. Davidovitch (1968) defined a new town as a city built to develop future areas. Galantay (1976) defined a new town as an intentionally formed and planned community, whereas Golany (1976) described a new town as urban settlement space that is newly built or expanded to have urban and

garden environments. Meanwhile, Campbell (1981) defined a new town as a development that offers various social, economic, and physical factors through prior plans for a specific area scope during the planned period.

In Korea, B. J. Park (1990) described a new town as a planned, artificially built city, whereas G. W. Hwang (1991) defined it as a city developed by collective plans and intensive plans of humans from a short-term perspective. G. J. Park (1995) described a new town as a developed new residential area and as an economically independent city equipped with functions of production, distribution, and consumption. On the other hand, G. H. Ahan (1995) and KRIHS (1992) and Korea Land & Housing Corporation (1997) defined a new town as urban settlement space newly built based on a comprehensive plan established to achieve the development objectives in relation to national policy tasks.

To summarize all these definitions, the concept of a new town includes policy means and planned and self-reliant functions. Specifically, Korea's new town development is carried out by a policy means of housing supply. Note, however, that a new town can be defined as a planned and independent city from the standpoint of urban characteristics. Here, the norm that a new town should be equipped with self-reliance in terms of production, consumption, and distribution from other cities in terms of functions and separated in terms of space should be preconditioned. Consequently, the concept of a new town by including newly planned settlement as the fundamental factor of a new town is universally accepted. A normative new town based on self-reliance is defined as a new town in a narrow sense. Meanwhile, a new settlement developed in a planned manner can be regarded as a new town in a broad sense.

Table 1-2 | Definitions of the Concept of a New Town

Agency	Definition of Concept
Korea Planners Association	- A new town is an urban settlement space that is newly built. - Construction based on a comprehensive plan to achieve clear development objectives set in relation to national policy tasks - Including non-self-reliant settlement space together with self-reliant settlement space
KRIHS	- One of the new town types developed in a planned manner - New town accommodating the population size and functions through which self-reliance can be retained - There is no special principle for differentiating new town; the new town temporarily developed in a separate, independent manner from the mother city is generally called a new town.
Korea Land & Housing Corporation	- A unit of settlement space having the size and functions that qualify it as a city - Classified into a new town within a city that has a new town type within the existing city; a new town, other than the city built in the physically separated environment from the existing town - Urban-type settlement space newly built based on a comprehensive plan established to achieve the development objectives in relation to national policy tasks

1.2.2 Development Background of New Town

Due to the 1st and 2nd five-year economic development plans in the 1960s, industrial base construction projects were implemented by the Korea government. When the 1st economic development plan was initiated, the Ulsan heavy and chemical industry complex and the Gumi export industrial complex were built in 1964. They were the first industrial complexes which were developed by President Chunghee Park's administration based on the goals of the 1st five-year economic development plan-groundwork for industrialization and fostering import replacing industries. Joining the GATT in 1967, Korea experienced export expansion. However, President Chunghee Park's administration thought that there would be a limit to economic growth based on light manufacturing industries such as textile and shoes. Therefore, in order to earn more foreign money, it was necessary to promote higher-value-added industries such as mechanical and electronic industries.

The Ulsan industry complex development project was initiated by one man's efforts named "Byoungcheol Lee" who was the CEO of Samsung. Considering industry complexes around the Rhine River, the Rotterdam industry complex, and the Entwerfen industry complex in the Netherlands as examples, he submitted "a proposal on development of comprehensive industrial belts" to the government. The government reviewed his proposal and accepted his suggestion to build the first heavy and chemical industry complex in Ulsan.

In fact, Ulsan had ideal conditions for constructing the heavy and chemical industry complex at that time. Also, located near the coastline, Ulsan has flatland and a river (Taehwa River) whose water could be used for industrial use. These physical conditions provided potential as a harbor city. Finally, as an important transportation hub, there were large cities such as Pohang and Busan near Ulsan, so it was easy to recruit labor.

When the Ulsan Industrial Complex Master Plan was initiated, the shipping industry was the first that was constructed within the site because it could also develop other industrial fields such as mechanical, logistics, and port industries. However, when developing the industry complex in Ulsan, Korea did not have any experience and knowledge to build a ship or a large vessel. Nevertheless, due to one man's (JooyoungJeong, the CEO of Hyundai Corporation) efforts and dedication to the shipping industry, a dock was constructed in the complex, and the Ulsan industry complex gradually served as a center of the world shipping industry. Built in 1962, the Ulsan industry complex was constructed in six phases, and many manufacturing buildings of other industries such as petrochemical, fertilizer, and car industries were built from 1962 to 1987.

In 1962, the Korea government established the Urban Planning Act and the Land Acquisition Act. Also, in 1966, the Land Readjustment Project Act was established by separating it from the existing Urban Planning Act, and the Local Industry Development Act was enacted in 1970 to encourage industrial development in local areas and to support the industry complex development.

In the late 1960s, highway construction accelerated the huge migration of populations between areas. In 1960, the population ratio in urban areas to total population was only 37.2% (population of Seoul was about 2.44 million). However, in 1966, the population ratio in urban areas was 42.7%, and increased up to 50.2% in 1970, which is slightly more than the population ratio in rural areas. In particular, there was a remarkable population increase in large metropolitan areas such as Seoul and Busan.

To solve this problem, the government voted against spatial expansion of large cities and suggested building satellite cities to prevent urban sprawl of the Seoul metropolitan area by designating a special area along the Seoul-Incheon development axis. However, there were no specific and comprehensive policy actions to disperse the urban population until the late 1960s. In 1966, Seoul began to develop the Han River in order to disperse population and urban functions concentrated along the north side of the river into the southern part. Yeouido, Jamsil, and Myoungdong were developed as new subcenters of Seoul through large-scale land readjustment projects during this period. In 1968, Seoul began to develop large-scale residential districts in the 825ha area of Kwangju-gun, Kyounggi province for people who lived in unregistered shantytowns of Seoul. That development area became a part of Seongnam. Considering that Seongnam was developed as part of the Second Seoul Construction Plan to accommodate one million people in the 9900ha land area at the south of the Han River, it was regarded as the first new city construction project in Korea.

In January 1971, the Urban Planning Act was completely revised. The main reason for the complete revision was because the existing planning act and regulations could not solve various urban problems caused by rapid industrialization and overcrowded populations in large cities. In the revised Urban Planning Act, a restricted specific facility area, a restricted development area, and a proposed urban development area were newly suggested. Also, in the 1st National Territory Development Comprehensive Plan established in October 1971, the government specifically enacted a provision for dispersing the population and industrial facilities of Seoul because excessive population and industrial building concentration in a specific city or area hindered development in other areas and caused serious pollution and security problems in Seoul. For these reasons, in 1974 the Jamsil new downtown development plan was established to spread out the population concentrated in the central area of Seoul and to accommodate 250,000 people within the 1118.7ha development area.

In the 1970s, the Korea government changed its industrial policies for the heavy and chemical industry. In order to foster the heavy and chemical industry and to construct large-scale industry bases, the government set up the Enhancement Act for Industrial Base Development in 1973 and the Industrial Base Development Corporation which was in full charge of developing industrial bases. By using this Act, the Changwon Mechanical Industry Complex (1974), the Yeocheon Chemical Industry Base (1973), the Pohang Steel Industry Base (1975),[3] Banwol Industry City, and Daedeok Research Complex were constructed.

3 During the development process, there were a lot of trial and errors and negative effects. For these reasons, while carrying out the new city development process, there were a lot of modifications of the plans and district designations. All new cities were completed by December 1996, and in June 1996, the government announced the completion of those five new cities.

Along with industry complex development, new cities were developed as satellite cities (bed town) in the surrounding areas. New industrial cities in Korea were the cities which were intentionally built in order to serve as central cities for reducing regional disparity and disperse population and industrial facilities. Thus, new industrial city development was usually focused on securing sites for industrial use within existing urban areas, and planned development for its surrounding areas was carried out separately after completing the industrial complex.

Despite the government's efforts to disperse the urban population, the urban population ratio to the total population in Korea increased from 59.17% (population of Seoul-6.88 million) in 1975 up to 69.4% in 1980 (Seoul-8.36 million). In particular, urban population was concentrated in the capital and southeast regions, and middle and southwest regions were excluded from growth development. To prevent population concentration in Seoul, the government established the Population Relocation Plan in the Capital Area(1977~1986). The government also established the Industry Base Relocation Act in 1977 to restrict construction of new heavy and chemical factories in the capital area and attract appropriate industry complexes in five local metropolitan cities (Busan, Daegu, Incheon, Daejeon, and Kwangju) and new industrial bases such as Yeocheon and Pohang. The New Administrative Capital Development Plan, which was proposed in February 1977 but cancelled, was another strategy for the Korea government to reduce urban sprawl in Seoul. Nevertheless, the population of Seoul was still increasing.

In the 1980s, the Korea government changed its policy directions toward region-based development plans. Based on the premise that population dispersion of the capital area could be achieved through the development of backward areas, the 2nd National Territory Development Comprehensive Plan established in 1982 put emphasis on development of regional residential zones and regional growth center cities. To support this strategy systematically, the Capital Area Improvement Plan Act was established in 1982 and regulated construction of population attracting facilities like schools. Also, planning acts which had been used between the 1960s and the 1970s as a response to rapid industrialization and urbanization were revised, and the government developed and implemented new city master plans. Seongnam, Kwacheon, and Banwol new cities were developed as satellite towns of Seoul metropolitan area. Ulsan, Pohang, Yeocheon, Youngdong, and Gumi were developed as new cities in local areas.

The Residential Site Development Promotion Act enacted in December 1980 provided a legal basis for acquiring large amounts of land and supplying residential sites at a cheap price. Seoul announced the concept plan of new cities in areas 10km away from the downtown Seoul area. Based on this concept plan, Mokdong and Sinjeong-dong were built as subcenters of Seoul. Seoul also developed large-scale residential districts such as Sangye, Junggye, Godeok, and Gaepo districts.

In 1985, the urban population ratio in Korea increased up to 77.2%. When President Taewoo Noh's administration was launched in 1988, the government announced the 2 Million Housing Construction Plan and designated many proposed residential site

development districts throughout cities in order to secure huge amounts of residential sites. Large-scale residential development projects were conducted by the national government or public development agencies. In 1989, the government began to construct five new cities around Seoul metropolitan city. The location criteria of those five new cities can be summarized as follows. First, those new cities should be located in areas where people can commute to Seoul within one hour. Second, the development area should be easy to connect to existing urban infrastructure systems. Third, the area should have pleasant environmental features, and the land price should be cheap.

As centers of Southeast (Bundang) and Northwest (Ilsan) capital region, Bundang and Ilsan new cities were developed in the areas ranging from 15km^2 to 20km^2. Pyoungchon, Sanbon, and Jundong new cities were built in the areas from 4km^2 to 6km^2 as new cities which spatially linked with existing urban areas.

Those five new city development projects were initiated by using the public development scheme in the Residential Site Development Promotion Act. Designation of proposed residential site development districts started between February and June in 1989 as the first development phase, but it took only four to nine months to get development approvals from the government. Construction for those new cities began between November 1989 (Bundang New City) and July 1990 (Ilsan New City).

In November 1989, residential units (apartments) were sold to the public in the Bundang New City, and people moved in the new cities in September 1991. As of 2008, people finished moving in the new cities and infrastructure construction was completed.

1.3 Paradigm Shift of the Implementation Process

Korea's urban development policy by period can be summarized as follows:

The 1960s and 1970s make up the period when the paradigm of economic growth mainly incorporated new town development, i.e., the period of new town development accommodating the industrial functions. Led by the central government, new town development accommodating the industrial base development, such as Ulsan and Pohang, was implemented as the priority, putting the highest priority on economic growth. Most new towns in those days can be categorized into new towns accommodating industrial functions.

During the 1980s~1990s, social distribution was a hot issue; it was a period of new town development putting the highest priority on housing supply. The problem of inferior dwellings of the low-income bracket emerged as a social issue, and the existing town management policy commenced in full scale. During this period, urban redevelopment of inferior dwellings where the low-income bracket resided was carried out in full force. In the 1990s, new towns were actively developed to address the housing shortage of ordinary people, as well as to stabilize the housing prices. The period focused on dealing with the population concentration in the Seoul Metropolitan Area and stabilizing national residential

living. Note, however, that the problem of environmental damages became rampant nationwide, owing to indiscreet new town development. Thus, interest in and concern over the environment were enhanced in urban development.

The 2000s served as a new transition period of urban policies; the sustainability of cities became a hot topic, and so the period of new town development became a hot topic as well. The period is also characterized by new town development accommodating complex functions. The disorderly growth of cities centered on the Seoul Metropolitan Area at the end of the 1990s generated negative side effects on the environment from new town development, and the urban development issue became a main interest politically and socially.

Furthermore, the Act on National Territory Plan and Use by integrating the Urban Planning Act and the National Territory Use Management Act was enacted so that the problem of national territorial development without consideration of the environment can be prevented institutionally and cities and rural villages can be managed in an integrated manner. The 2000s is categorized as the period when new public spaces began to be created through the participation of various stakeholders. It was an era when citizens participated in developing and leading the urban environment through the Cheonggyecheon Restoration project and Making Cities Where People Want to Live, which rendered new vitality to the city center of Seoul.

Korea's urban environment has so many tasks to solve. Various factors that may affect future cities including low birth rate, aging, climate change, and diverse cultures exist or have newly emerged. The period needs comprehensive urban policies to cope with such changes in the future. Precise prediction of the future and establishment of relevant urban policies enable sustainable urban development. The urban policies in Korea for the past 60 years have developed and grown uniquely according to the paradigm shift of the rapid growth process. Advanced urban policies that accept a new paradigm should be devised by reflecting world trends. Ultimately, sustainable urban development policies need to be introduced in the future generation as well.

Table 1-3 | The Flow of Urban Development Policy

Temporal paradigm	Before the 1960s	1970	1980	1990	After the 2000s
Economic growth		Industrial Base Development Promotion Act			
	Urban Planning Act	Industrial city construction			
Social distribution		Urban Redevelopment Act	Housing Site Development Promotion Act Housing Construction Promotion Act	City and Residential Environment Reorganization Act	
			Redevelopment, residential environment reorganization project	5 new towns in Seoul Metropolitan City	New town project
Sustainable environment					National Territory Planning Act
			Han River/ Streets conducive for walking	Environmental impact assessment	Cheonggyecheon stream/ City where people want to live

Sustainable City Development

Chapter 2

Details of Implementation

1. Industrial New Town (1960s~1970s)
2. Residential New Town (1980s~1990s)
3. New Town Construction in Phase 2 of the Seoul Metropolitan Area: After the 2000s
4. Specialized Complex New Town (After on the 2000s)·
5. Enterprise city

Details of Implementation

1. Industrial New Town (1960s~1970s)

1.1 Industrial New Town that Led Economic Growth

1.1.1 Overview

The government commenced industrial city construction through the enforcement of the First Five-Year Economic Development Plan in 1962, and the first industrial city built in this manner is Ulsan. This first industrial city is the Ulsan new town, which had a target population of 150,000 and expanded the existing city of Ulsan eup. Furthermore, Pohang Steel and Gumi industrial city began to be built in the late 1960s, many industrial cities were built in many places nationwide. Specifically, the following industrial cities began to be built in the late 1960s:

Oil refinery and power in Yeocheon, fiber, textile, and casting in Daegu, car, machinery and fiber in Gwangju, and paper manufacture, machinery, and fiber in Jeonju in 1967; Steel and relevant industries in Pohang in 1968; Foods, woodcraft, and silk fabric in Chuncheon, machine parts, agricultural tools, and casting in Daejeon, fiber, chemicals, and machinery in Cheongju, fiber, electronics,[4] and chemicals in Gumi, and sewing, wigs, and fiber in Seongnam in 1969; Masan Free Export Zone, textile, foods, and pulp in Wonju, machinery, chemicals, and fiber in Iri, and foods, agricultural tools, and chemicals in Mokpo and Incheon Industrial Complex and Incheon Complex 3 in 1970.

4 In 1966, President Chunghee Park asked Kihyoung Kim from the Electronic Ceramic Industry Research Center in New York, to return to Korea and work for the government. Later, in the 1970s, the government constructed the first electronic industry complex in Gumi. In 1974, Korea National Co. first produced color televisions, and Samsung and Goldstar co. (LG) succeeded in localizing television products. This was the starting point of the electronic industry in Korea.

To aggressively implement the industrialization policy along with the establishment of the economic development plan in the 1960s, Korea built the Ulsan Industrial Center in 1962 for the first time in Korea and focused on developing national key industries such as oil refinery and fertilizer. In addition, the government expanded SOC, including roads, waterworks, and ports. Many companies also developed factory sites.

In 1965, the Export Industrial Complexes 1~6, which can be considered the first industrial complex based on a planned location, were constructed in Seoul and Incheon through the enactment of the Export Industrial Complex Development Act. Later, Pohang Steel and Ulsan Petrochemical Complex were built. In 1968, industrial complexes were developed mainly by the private sector in major cities such as Busan, Daegu, Incheon, and Seongnam as industrial site development projects to distribute industries to the provincial areas and to activate the local economy.

In addition, free export zones were established in specific coast-adjacent areas, attracting foreign investment. In 1970, the Free Economic Zone Establishment Act was enacted, and the Masan Free Export Zone and Iri Free Export Zone were developed for export promotion, employment increase, and technological improvement. In 1973, following the declaration of a heavy chemical industrial nation, Korea intensively developed the heavy chemical industry and enacted the Industrial Base Development Promotion Act for the balanced deployment of industrial location, population, and industries. Through large-scale industrial base constructions in Changwon, Onsan, Yeocheon, Gumi, and Geoje, the Dongnam Coastal Industrial Belt was developed.

The government enacted the Industrial Complex Management Act in 1975 after recognizing the need for industrial complex management as industrial complexes gradually developed based on planned locations. In 1977, the industrial location policy at the national level became more specific and systematized as the Industrial Deployment Act was enacted.

1.1.2 Ulsan New Town

A policy specifying the development of the Ulsan new town was formulated at the end of 1961, and it was designated and declared as a specific industrial district on January 27, 1962. The groundbreaking ceremony was held on February 3, 1962. As for the plan of a hinterland city, the Ulsan Development Plan HQ held an urban planning contest, and the National Territory Administration selected one and publicly announced it. The target population was planned as 150,000 during urban planning, and many modern urban planning attempts were carried out, including the separation of urban and residential areas, consideration of pollution, adoption of neighborhood residential concept, transit traffic handling, and green area development. The urban area was greatly expanded according to new town development, increasing by about 4.4 times to 179.66km^2 including the surrounding areas from the 40.75km^2 of the existing Ulsan eup.

Figure 2-1 | Urban Planning Map of Ulsan at the Initial Stage (1972)

Figure 2-2 | Present View of Ulsan

1.1.3 Banwol New Town

Banwol refers to the current city of Ansan; it is Korea's first planned new town in modern times. Banwol began to be built after the development of Ulsan and Seongnam New Towns. The plan was to develop the new town in an area where no existing town existed, i.e., from scratch, and Banwol differs from the other new towns in this regard.

The purpose of Banwol new town development was to distribute the population and industries in Seoul by building a new industrial city in the Seoul Metropolitan Area at the instruction of the President of Korea on July 21, 1976. The location was decided in August 1976, and the project was confirmed in September 1976 with the Industrial Base Development Corporation as the project implementer.

The planned site was about 41㎢ and the target population was 200,000 at the initial stages; the construction period was 10 years from 1977 to 1986. Note, however, that the plan was revised quite considerably because of the real estate business depression in the early 1980s. On December 4, 1976, urban planning was finalized, and construction was commenced on March 30, 1977. The planned population rose to 300,000 by changing the urban planning in 1984, and infrastructure development was completed at the end of 1993 based on the revised plan. In 1995, the remaining farming land of about 8 million m^2-which was reserved in the adjacent area of the city center-began to develop. At the end of 1995 after the phase 2 development, the population exceeded 400,000; currently, over 700,000 people live in Ansan City (formerly known as Banwol).

Figure 2-3 | Urban Planning Map of Banwol at the Initial Stage (1972)

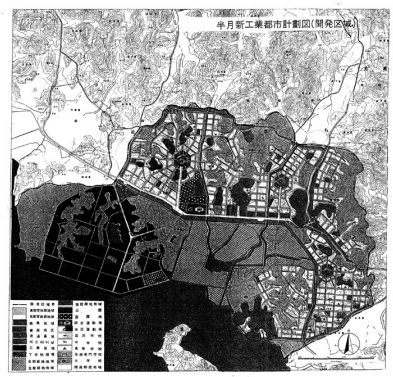


Figure 2-4 | Present View of Banwol

1.1.4 Changwon New Town

Designated as a machine industrial base in 1973, the Changwon area was designated and announced as an industrial base development district in 1974; thus, construction of the industrial complex commenced. In April 1977, urban planning was established on the new town. The Changwon industrial city was developed mainly by Gyeongsangnam-do under the Industrial Base Development Promotion Act. In the 1980s, development was carried out centered on Changwon City. Although there were many difficulties in the early stages due to the stagnant real estate industry, industrial city development was successfully completed, thanks to the economic boom in the mid-1980s along with the relocation of the Provincial Office on July 1, 1983. The development area was about 21km^2, and the target population was 300,000. In 1989, the target population was exceeded; as of the end of December 2003 the population stood at 514,463. The city serves as a central city of the Gyeongnam southern coastal area with a population twice its target population.

After announcing 12 dongs of Masan City, Gyeongnam and partial areas of 28 dongs including Seosang-dong, i.e., 43.352km^2 (land: 41.336km^2, coast: 2.016km^2) as industrial base development district through the Construction Ministry Notice No. 92 on April 1, 1974, it was revised as 53.120km^2 in 1991. The general machine industrial base was formed in a flat area, south of the Changwon basin, worth about USD 2 billion; an industrial city with planned population of about 300,000 was built on the flat and slope areas of the northeastern area of the Changwon basin.

Figure 2-5 | Urban Planning Map of Changwon at the Initial Stage (1972)

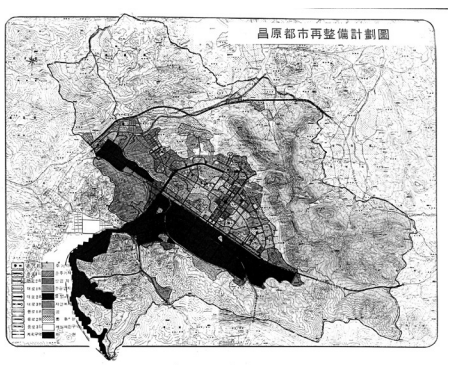
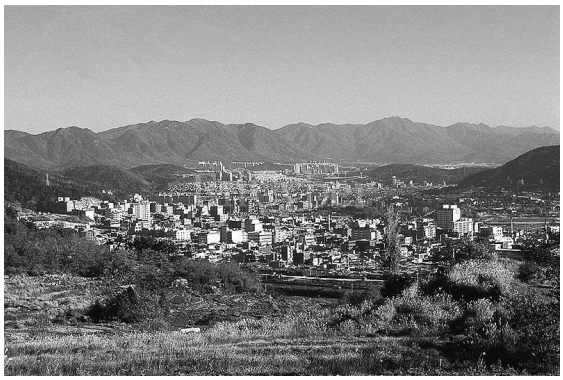


Figure 2-6 | Present View of Changwon



The southeast coastal heavy industry belt connecting Pohang and Busan was formed, and Changwon was developed as a key industrial city of the machine industry, becoming an industrial development stronghold in the national territory plan. A development plan was established taking into consideration the comprehensive national territory development plan and Busan region development plan. Through efficient land use and moving path handling, Masan and Changwon were set as a broad city region sharing Masan's urban functions. Productivity was sought to enhance industrial affiliation.

A planned new industrial city environment was created through the residential environment formation for industrial complex employees, together with the plan for support facilities of adequate size and industrial complex environmental reorganization.

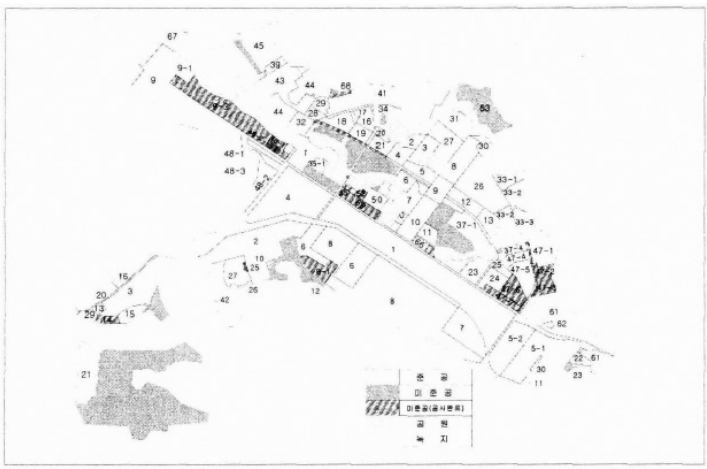
a. Land Use Plan

Land use was planned as follows: Changwon new town's total area was to be 53.12km^2, with the industrial area making up 22.6km^2, semi-industrial area constituting 1.17km^2, residential area accounting for 14km^2, commercial area consisting of 2.8km^2, and green area making up 12.43km^2.

b. Transportation Plan

The road connecting Masan-Changwon-Jinhae and Busan was planned to be at least 35m wide, and the main road of the industrial complex was planned to be a wide road (50m, 70m); the street within the area was planned to have minimum width of 25m.

Figure 2-7 | Current Status Formation Map of Changwon New Town



c. Park and Green Area Plan

Since the green area performs as cleaning work for the living environment and contributes to industrial complex environmental reorganization and recreation, it is classified into park, facility green area, cultural asset preservation district, and natural green area. The industrial area that cannot be used for a factory site has been partially converted into a green area.

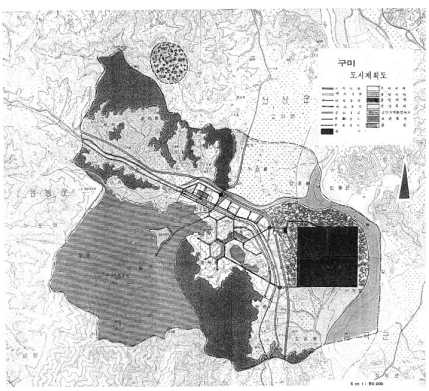
d. Positive Ripple Effects of the Construction of Changwon New Town

Through the successful formation of a national industrial complex, a stable residential and living environment was offered, becoming the foundation for the Changwon National Industrial Complex to grow into a global machine industry complex. In particular, the location of the Provincial Office enabled comprehensive and prompt administrative support for the development of industrial complexes in the surrounding areas. Moreover, the relocation issue of the Gyeongnam Provincial Office was solved, and Changwon developed as a self-reliant new town offering a pleasant living environment as a planned city.

1.1.5 Gumi New Town

Any traces of an industrial city could not be found in Gumi, a small eup, until 1968. Seeking industrial complexes along the Gyeongbu Expressway[5] as the expressway construction commenced, the government selected Gumi and developed it as a local industrial complex in March 1969. In 1973, the construction of a general industrial complex and an electronics industrial complex was completed. As the industrial complexes were operated, the population gradually rose. Therefore, the government planned the Gumi new industrial city adjacent to the existing city town out of concern for the disorderly housing site development. On July 23, 1977, the Gumi New Town Project Plan was approved by the President of Korea, and the housing site development project was commenced in December 1977. The development period was 8 years from 1977 to 1985, the planned development area was about 3.5 million m^2, and the target population was some 54,000. At the end of 2007, the population of Gumi City was about 390,000. This population includes the surrounding areas arising from the adjustment of the administrative district, and the city grew to about 8 times larger than initially planned in terms of its target population.

Figure 2-8 | Urban Planning Map of Gumi at the Initial Stage (1972)



5 It was when President Park visited the US Artillery Academy in 1954 that he first saw the highway in the US and thought about constructing it in Korea. After seeing the Autobahn in Germany in 1964, he made a decision to construct the first highway (Gyeongbu Highway) in Korea and discussed it with JooyoungJeong (the CEO of Hyundai co.).

In May 1967, the government announced the Gyeongbu Highway Construction Plan. Although it cost much more money than expected and there were a lot of problems and accidents during the construction, Gyeongbu Highway was built in July 7th, 1970. Gyeongbu Highway was a 428km highway from Seoul to Busan. About 9 million workers and 1.65 million construction equipment were invested for the construction.

Figure 2-9 | Present View of Gumi

1.1.6 Yeocheon New Town

Yeocheon refers to modern-day Yeosu City. With the launch of the Yeocheon Industrial Complex in February 1967, the possibility of it growing into an industrial city sprang up a long time ago. As the national industrial policy shifted to the heavy chemical industry, Yeocheon was selected as a suitable area for a petrochemical complex. In September 1973, a comprehensive petrochemical complex development plan was established, and the complex and the surrounding area were designated and announced as an industrial base development district. The new hinterland city that aimedto absorb the employees of the Yeocheon Industrial Complex was planned to have an area of about 10km^2 with planned population of 100,000. The planned construction period was between 1977 and 1986. The plan was expanded later, however, and about 34km^2 was developed; up to 300,000 people could be accommodated, according to the development progress. After Yeocheon was upgraded to Yeocheon City in 1986, it was combined into Yeosu City in 1998. As of 2008, about 300,000 people live in the city, which was reborn as a city with its hosting of the World Expo. Yeosu with its splendid natural environment is expected to emerge as a tourism city as well.

Figure 2-10 | Urban Planning Map of Yeocheon at the Initial Stage (1972)

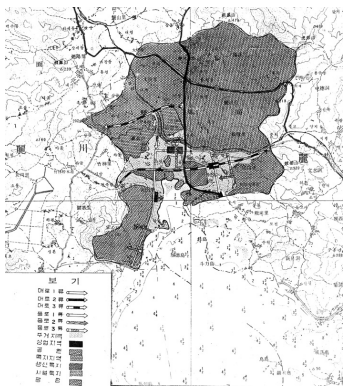


Figure 2-11 | Present View of Yeocheon

1.2 Construction of New Industrial Complexes and Compound Clusters

1.2.1 Construction of New Industrial Clusters

The industrial location policies in the 1990s emphasized balance between industrial location areas based on the policies of the 1980s and drew interest in enhancing industrial and international competitiveness. The industrial location policy direction in the 1990s can be looked into through the third Comprehensive National Development Plan. In the third national plan, the following were presented as the basic direction of the industrial location policy:

First, the activation of the local industry to enhance fairness of industrial development and adequate management of the industrial location in the Seoul Metropolitan Area;

Second, the development of a cutting-edge technology industrial complex for the industry's international competitiveness improvement;

The third direction was the smooth supply of industrial locations and environmental preservation.

For the regional balance of industrial locations, the industrial concentration ratio in the Seoul Metropolitan Area was decreased, and the development of industrial complexes in outdated regions was expanded. Concerning the Seoul Metropolitan Area, new industrial complex development was controlled, with the relocation of large enterprises to provincial regions induced. Meanwhile, 95% of the industrial complex supply volume was planned in the provincial areas. In the central and southwestern regions in particular, about 60% of the newly developed factory sites were deployed by 2001 by developing new industrial regions. In addition, the Southeast Coastal Industrial Belt was implemented to enhance the industrial structure, and the development of small and medium-sized industrial complexes was promoted for the development of outdated regions. For industrial international competitiveness consolidation through the nurturing of the cutting-edge industry, cutting-edge technology industrial complexes were developed in line with the regional characteristics. To reduce the environmental impacts of industrial complex development, 75% of the total industrial complexes supplied were to be developed as planned locations. The system for environmental management, including the consolidation of pollution-prevention facilities installation was reorganized.

In the 1990s, industrial sites were to be supplied in a planned manner by establishing industrial location supply plans. The first industrial location supply plan covered the period of 1992 to 2001 as the target year of the third national territory plan. The basic direction of the plan was as follows: 1) local industry nurturing and planned location supply expansion in the west coast area for the control of industrial concentration in the Seoul Metropolitan Area; 2) balanced development between industrial regions and enhancement of local industrial structure, and; 3) harmony between industrial location and environmental preservation. The presented plan involved supplying a total of 114.4㎢ of industrial complexes for 10 years during the period 1992~2001. The planned location ratio of industrial complexes increased from 61.4% in 1996 to 63.1% in 2001. Of the industrial complex supply area, the national industrial complex ratio fell from 60% in 1996 to 58.25% in 2001.

Regarding the industrial site supply achievements during the period 1992~1996, individual location surged by about 1.5 times because of the economic boom and easing of land use restrictions. A phenomenon wherein the Seoul Metropolitan Area became wider through the excessive supply of planned areas in Incheon, Gyeonggi and Chungnam and Chungbuk occurred, including insufficient sales of industrial sites supplied in provincial regions due to insufficient demand from businesses.

Table 2-1 | The First Industrial Sites Supply Plan Supply Performance

Category		Plan (A)	Actual Supply (B)	B/A
1991	Total	402.8	382.6	95.0
	Planned location	236.7	208.7	88.1
	Individual location	166.1	173.9	104.7
1996	Total	463.7	476.6	102.8
	Planned location	284.6	216.7	76.1
	Individual location	179.1	259.9	145.1
Actual supply during the period 1992~1996	Total	60.9	94	154.4
	Planned location	47.9	8	16.7
	Individual location	13.0	86	661.5

Source : Ministry of Construction and Transportation (2007). Annual Report on the Plan and Use of National Territory in 2007. p. 155.

1.2.2 Construction of Compound Clusters

A relative paradigm shift was executed on the industrial location policy; thus, various types of industrial sites were supplied in the 2000s. By adopting an urban cutting-edge industrial complex system wherein industrial companies can be located in small scale in the urban area, the government intended to smoothly supply industrial sites in line with the change in industrial conditions. Since 2006, a national rental industrial complex system has been adopted so that small and medium businesses (SMBs) can secure industrial sites at low cost. Furthermore, the long-term, very low-priced rental industrial complex supplied to foreign-invested companies applied to domestic companies at 1% of the industrial site cost to foster SMBs possessing technological prowess and competitiveness. The rental industrial complex was constructed in the non-Seoul Metropolitan Area, and companies relocating from the Seoul Metropolitan Area were preferentially selected in moving into the complex to contribute to national territorial balanced development.

As a new strategy to enhance industrial structure and strengthen international competitiveness, the establishment of a local innovation system and activation of industrial clusters emerged as key tasks. In particular, the industrial cluster policy caused a great change in terms of the industrial complex development method. In other words, it shifted from the mode of developing an industrial complex centered on the manufacturing industry in the past into the mode of developing the industrial complex wherein production and technology support were unified, including manufacturing firms and relevant service companies. For outdated industrial complexes older than 20 years, environmental improvement and reorganization were implemented so that they can transform into cutting-edge and compound industrial complexes.

In the industrial complex development system, the role of local governments was consolidated. As for national industrial complexes, the central government designates one, but development plans are established by listening to the opinions of the mayor/governor. General and urban cutting-edge industrial complexes can be designated by the mayor/governor following consultation with or application of a mayor/gun (county) head. For industrial complex development suitable for the local situation, the mayor of a city with a population of 500,000 or more can designate the industrial complex. In the case of smaller industrial complexes, a mayor/gun head/gu head can designate the industrial complexes.

Meanwhile, in the Second Industrial Location Supply Plan during 2002 and 2011, the planned sites were presented by reflecting the details and policy direction of the Fourth Comprehensive National Territory Plan. The presented Second Industrial Location Supply Plan involved supplying the total area of 99.8~113.5km^2 and an annual average area of 10.0~11.4km^{2}after considering the industrial location demand estimation, industrial structural change, and economic condition change during 2002 and 2011.

The supply plan was devised so that smooth location supply can be carried out according to the policy of nurturing main and specialized industries by region. As a result of industrial location estimation, Chungnam, Gyeonggi, and Chungbuk were found to need 14.4km^2, 13.3km^2, and 12.3km^2, respectively. Based on this, the influence of the Seoul Metropolitan Area can actually expand to the Chungcheong region. By location type, the planned location ratio rose to 52.0%, 54.6%, and 56.1% in 2001, 2006, and 2011, respectively, instead of reducing the individual location ratio considering the environmental problems.

Table 2-2 | Industrial Complex Location Type Supply Plan

Category	2001	2006	2011	Supplied Area		
				2002~2006	2006~2011	Total
Total	512.0 (100.0)	571.9~580.1 (100.0)	611.8~625.5 (100.0)	59.9~68.1	39.9~45.4	99.8~113.5
Planned location	266.2 (52.0)	311.1~316.7 (54.4~54.6)	340.4~350.3 (55.8~56.1)	44.9~50.5	29.3~33.6	74.2~84.1
Individual location	245.8 (48.0)	260.8~263.4 (45.6~45.4)	271.4~275.2 (44.2~43.9)	15.0~17.6	10.6~11.8	25.6~29.4

Source : Ministry of Construction and Transportation (2007). National territorial balanced development HQ.“National Territory Handbook.” p.304.

2. Residential New Town (1980s~1990s)

2.1 New Town Construction in Phase 1 of the Seoul Metropolitan Area : 1980s~1990s

2.1.1 Overview

New cities in phase 1 began to build 2 million hom es in 1989; 5 new towns continued to be built for 7 years until 1996: Bundang, Ilsan, Pyeongchon, Sanbon, and Jungdong. They were selected under the following location criteria: commute is possible within an hour among the possible areas for large-scale development in the outskirts within 20-25km; their linkage with the existing urban infrastructure is easy; a pleasant environment can be maintained, and land prices are low. The Bundang and Ilsan new towns are of the size that enables self-reliant city formation and were groomed as central cities in the southeast and northwest of Seoul, respectively. The Pyeongchon, Jungdong, and Sanbon new towns were developed as new towns linking the existing ones.

The new towns in phase 1 were planned to be 5 cities with 5,014ha area and 1.17 million people. Urban design in the new towns that was developed in the 1990s was done as follow-up work of the housing site development-as per Chapter 8 of the Architecture Act-on the entire city in addition to the commercial area. The main issues of the 5 new towns plan in the Seoul Metropolitan Area were how to connect 2D planning with 3D architectural planning organically. The urban design system was applied as an alternative. The urban design of the five new towns included regulations on various plan factors relevant to the residential complex plan from housing type and development density to the number of floors and deployment type, main buildings' directions, and moving path system. In the case of the five new towns' plan unit setting type, sustainable urban development plans emerged according to the development subject or planner as follows:1) self-centered theory focusing on human relationships by new town, 2) hierarchical organizational theory pursuing an open community concept and facility use convenience, and 3) Urban Village Movement.

Table 2-3 | Overview of the Five New Towns in the Seoul Metropolitan Area

Category	Bundang	Ilsan	Pyeongchon	Sanbon	Jungdong
Development purpose and characteristics	· Central business and commercial area in the Seoul Metropolitan Area · Self-reliant new town	· Garden city equipped with artistic and cultural facilities · Central city west of the Seoul Metropolitan Area · Advanced base for the unification of South and North Korea	· New central business area of Anyang City	· New central business area of Gunpo City · Garden city with splendid natural environment	· New central business area of Bucheon · Suburban residential area centered on industrial areas between Seoul and Incheon
Location	25km southeast of Seoul, Seongnam City in Gyeonggi-do	20km northwest of Seoul, Goyang City in Gyeonggi-do	20km south of Seoul, Anyang City in Gyeonggi-do	25km south of Seoul, Gunpo City in Gyeonggi-do	20km west of Seoul, Bucheon, Gyeonggi-do
Area	19.6km^2	15.7km^2	5.1km^2	4.20km^2	5.5km^2
Population (no. of households)	390,320 people (90,758 households)	276,000 people (69,000 households)	168,188 people (42,047 households)	165,588 people (41,397 households)	170,000 people (42,500 households)
Project implementer	Korea Land Corporation	Korea Land Corporation	Korea Land Corporation	Korea Housing Corporation	Korea Land Corporation Korea Housing Corporation Bucheon City
Project period (Y/M)	1989.8~1996.12	1990.3~1995.12	1989.8~1995.12	1989.8~1994.12	1990.2~1994.12

Source : Korea Land Corporation (1997). History of Bundang New Town Development.

2.1.2 Bundang New Town

Located 25km southeast from the city center of Seoul, the Bundang new town district has typical features of a farmland in a large city's suburban area. As of 1989, 12,000 people lived there, and 2/3 of them were engaged in agriculture or factory work. Of the planned area, 1,894ha or 70% was used as rice paddies, fields, and facilities for horticulture and vegetables.

Bundang is close to Gangnam, which is quickly emerging as a new town center of Seoul; it is also near the Gyeongbu Expressway. Thus, the inflow of many business and

commercial facilities from Seoul was expected. In addition, the Tancheon stream flowing from south to north across the center of the city offers a beautiful landscape in harmony with the surrounding hill areas. The mountains are well preserved and the water is not that polluted. Thus, Bundang boasts optimal conditions as a suburban area preferred by the middle or upper-income levels of Seoul.

The Bundang new town is the largest among the 5 new towns and was groomed as a self-reliant city in the initial plan, as directly reflected on the land use plan; the housing site ratio was planned to be the lowest among the 5 new towns.

Since 3.7% of the entire city area was allocated to sites for business, information and commercial/distribution facilities transferred from Seoul. When the business sites were all developed as business facilities, job creation was expected to exceed the possible labor population of the Bundang new town. The possibility of self-reliance was sufficient in terms of the land use plan. Note, however, that a snag occurred in the attraction of self-reliant functions, and a large amount of land was unsold. Consequently, the fact that 8.3% of commercial land was designated to also include business sites,were deemed excessive.

The generation of unsold commercial land was partly due to the external physical plan that included the insufficient function distribution strategy of Seoul city and the inadequate measures to attract the relevant facilities, as well as the unexpected economic crisis, rather than it being a problem with the land use plan.

The Bundang new town is located in a green area, south of Seongnam City, which accommodates 94,6000 APTs and 2,980 detached houses (total: 97,580 households) in 1,963ha (Korea Land Corporation, 2007). As for the project schedule, following the designation as a scheduled district in May 1989, the development plan was approved at the end of August 1989, and the implementation plan in October 1989. Housing site development construction began in November 1989. At the end of September 1991, 2 years and 5 months after the district designation, the unprecedented quick project schedule-since residents occupied the pilot APT complex-resulted in a serious housing shortage at that time.

For the Bundang new town land use plan, 32.4% was for the housing construction site, 8.3%for commercial and business site, and 59.3% for public facilities site. For the housing construction site, detached houses, terraced houses, APTs, and complex uses constituted 3.7%, 4.0%, 24.0%, and 0.7%, respectively. The detached houses' 24,000m^2 area and 2,980 households accounted for 11.4% and 3.2% of Bundang's total area of 19,636,000m^2 and total households of 97,580, respectively. The neighborhood commercial sites deployed near the detached housing and APT housing complexes made up 2.1% (420,000㎡), whereas the central commercial site constituted 2.5% with 496,000㎡ deployed within station zones nearby.

Table 2-4 | Development Objectives of Bundang New Town

Pleasant Environment	Safe City	Convenient Facilities
· Creation of future-oriented urban spaces without air pollution · Securing adequate green area spaces and convenience facilities · Creation of urban landscape harmonized with nature	· Securing moving path system and facilities protected from safety accidents · Equipped with disaster prediction and warning system	· Equipped with public transportation means linked with subway · Easy retention and management of various infrastructure facilities relevant to APT complexes · Enhancing business efficiency through the clustering of business facilities and adoption of cutting-edge information conveyance system

a. Basic Principles

By maximizing the proximity advantage to the Seoul Metropolitan Area, attempts to ease urban problems such as traffic and residential and congestion problems were made, including self-reliant city development. This entailed sharing some of the functions of the Seoul Metropolitan Area beyond development focused on residential functions. Considering the satellite city characteristics, the Bundang new town has city-oriented features but was planned to accommodate functions that were not essential to city center location.

b. Basic Direction of Function Setting

As a function-sharing city of Seoul equipped with a pleasant environment, the new town was developed with a self-settlement base by awarding Seoul's supplementary business, service function, and IT function; at the same time, facilities for education and dwelling were expanded at a sufficient level. Moreover, by accommodating various income brackets, easing of tensions between those brackets was induced to avoid disrupting Seoul's capital functions and sharing those functions. Supplementary conditions at the Seoul Metropolitan Area level were shaped.

Table 2-5 | Characteristics of Bundang New Town Plan

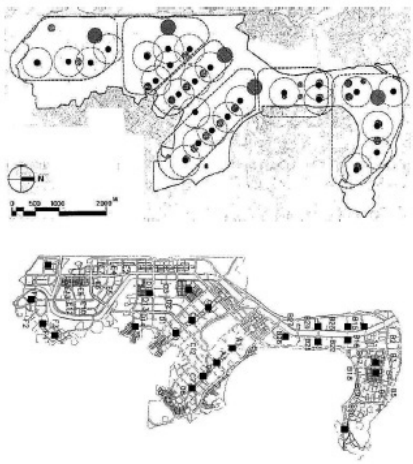
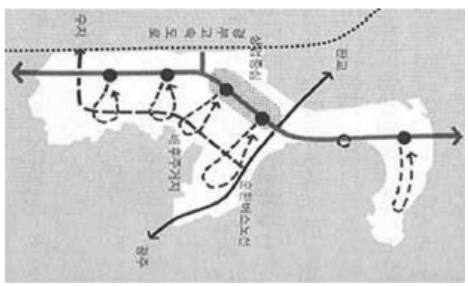
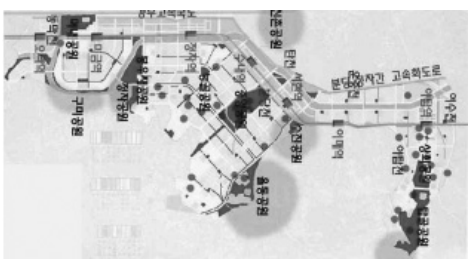
	Bundang New Town	
Living zone plan	- Plan to be 1 large, 3 medium-scale, and 6 small-scale living zones centered on the station near the zone - Even deployment along the long topography considering the northwest growth direction of the city - Areas surrounding the expressway, commercial, business, and public facilities to be deployed rather than dwellings - Developing main shopping malls along pedestrian roads and consolidating walking sites to make use more convenient - Securing all city-centered shopping complexes in addition to commercial districts making up each living zone	
Street network plan	- Background concentration and distribution roads to form a trapezoid shape from east to west, building subway stations at the connection parts of the trapezoid shape and enhancing centralism - With basic framework tying small-scale living zones along the principal roads, connecting the supplementary principal roads as a loop to reduce traffic	
Park green area plan	- Planning for the central park to be the center of urban cultural activities so as to accommodate cultural facilities and link with surrounding facilities - Adopting a walking green area axis and connecting in a 3D manner - Establishment and preservation of the existing topography - Preservation of ecosystem and green area axis	

Table 2-6 | Accommodation Functions

Principles of Establishment	Accommodation Functions	
· Self-reliant functions required for a city with 400,000 people · Planned function for the new town's characteristics development · Possible relocation function from Seoul	Self-reliant function	· Everyday life conveniences including commercial and service facilities required for residents' everyday life · Security and social order maintenance function · Educational function meeting residents' characteristics and demand. · Other self-reliant industrial function required for the city's growth and formation
	Planned function	· Information industrial function including software · Large distribution and leisure industrial function · Function for mutual supplementation with adjacent cities including Seongnam and Suwon · Other business, commercial, and financial-related function
	Sharing function of the Seoul Metropolitan Area	· Residential function to share the residential demand to be accommodated by Seoul and Seoul Metropolitan Area · Business-related function transferred from Seoul · Urban functions located unavoidably within the Seoul Metropolitan Area, which need to be transferred from Seoul

c. Project Overview

Table 2-7 | Project Overview

Purpose and characteristics	- Self-reliant new town functioning as central business and commercial district in the Seoul Metropolitan Area along with Seoul's Gangnam area - Pleasant suburban residential area for the middle class
Location	- Located 25km southeast of the Gangnam area in Seoul, Seongnam City, Gyeonggi-do
Area	1,894 ha
Population	390,000 people (reduced from 420,000 people)
No. of households	97,500 households
Project implementer	Korea Land Corporation
Transfer period to local government	1993

d. Land Use Plan

Table 2-8 | Land Use Plan

(Unit : ha, %)

Total	1,894.0	100.0
Residential area	614.1	32.4
Commercial area	85.5	4.5
Business area	72.5	3.8
School	72.1	3.8
Public office	16.0	0.9
Road	380.4	20.1
Park and green space	365.5	19.3
Others	287.9	15.2

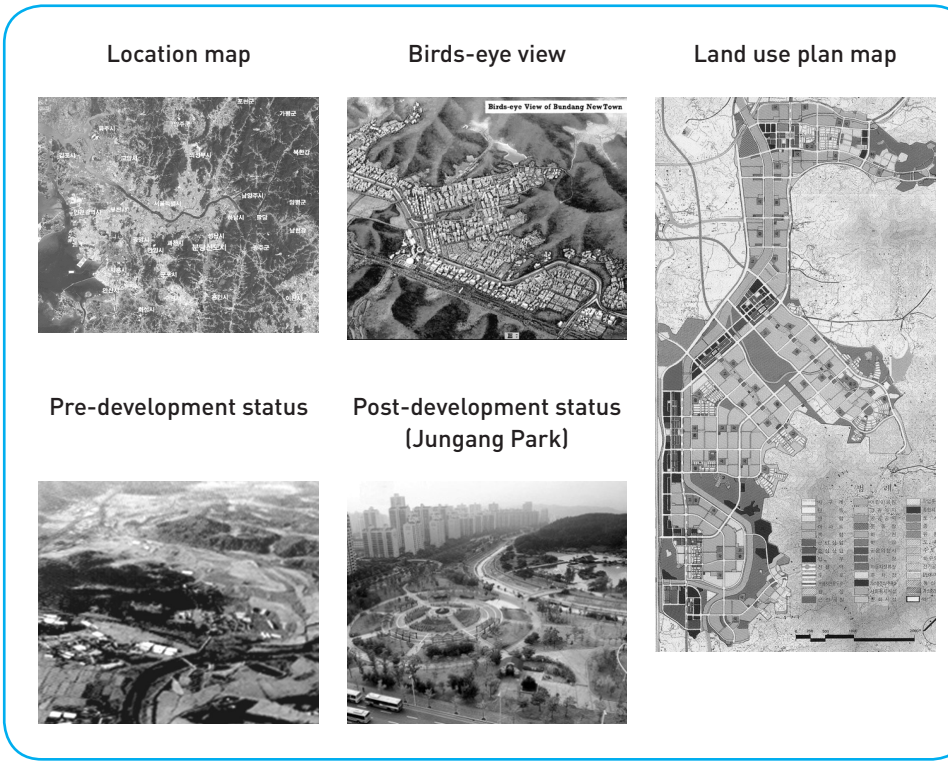
e. Road Network and Spatial Composition

Two principal roads and five circular roads make up the basic road network of the Bundang new town. The two principal roads are deployed in a parallel manner from south to north along the Tancheon stream with about 500m gap. The bent ladder-shaped axis consisting of the two roads becomes the basis of the road network of Bundang. Along these backbone roads, 5 subway stations and commercial areas are allocated. The commercial areas centered on the 5 stations and the surrounding residential areas are connected with 5 circular roads; thus, each unique living zone is formed.

f. Park and Green Area

The Bundang's green area system is formed based on the two axes. One axis is a land axis stretching from the mountainous area in the southeast across the central park and arriving at the Tancheon stream. The other axis is the water axis of the Tancheon stream passing through south and north of Bundang. These two green area axes cross at the center of the city center, with the city hall, cultural facilities, and central plaza deployed along the crossing point forming the symbolic center of Bundang new town. Based on these two axes, the roads for vehicles and the pedestrian road network that completely separated from the former are constituted. The latter connects with a school, a shopping mall, and a park within a housing complex and between housing complexes and city centers through walking and bicycling.

Figure 2-12 | Land Use Plan of Bundang New Town and View of the City



Source : Homepage of Seongnam City Hall

2.1.3 Ilsan New Town

Although Ilsan was built as a self-reliant and garden city, it can hardly be regarded as a full-fledged self-reliant city. The Ilsan new town has the lowest population density among the 5 new towns. It also has a flat topography with smaller natural factors such as rivers, diminishing the factors' effects. Nonetheless, Ilsan made great efforts to develop as a pleasant garden city by securing the highest ratio of parks and green areas among the 5 new towns. In terms of its housing site, the APT site ratio is the lowest, whereas the detached housing site ratio is the highest; more various and pleasant residential complexes were also developed than other new towns.

The Ilsan new town is located in the suburban areas of Goyang City, having an area of 1,576ha and accommodating 69,000 households (Korea Land Corporation, 2007). As for the project schedule, the scheduled district was designated in June 1989 and the development plan was approved in June 1990. The housing site development construction was initiated in July 1990. At the end of August 1992, 3 years and 2 months after district designation-which was a fast schedule since residents occupied APTs for the first time-the Ilsan New Town promptly coped with the housing shortage like the Bundang New Town.

For the land use plan of Ilsan new town, 33.5%, 7.8%, and 58.7% were housing construction site, commercial and business site, and public facilities site, respectively. With regard to the housing construction site, detached houses, terraced houses, APTs, and complex uses accounted for 8.7%, 3.5%, 19.6%, and 1.2%, respectively. The 1,370,000m^2 area and 5,870 households of detached houses made up 8.7% and 8.4% of Ilsan's total area of 15,736,000m^2 and total 69,000 households, respectively. The neighborhood commercial site deployed near the detached housing complex and APT complex constituted 0.6% (91,000m^2). Meanwhile, the central and general commercial sites deployed centered on nearby station zones made up 2.2% at 353,000m^2. The detached housing site consisted of 5,870 lots, with 3,064 lots for relocated people and 2,806 general housing lots to be sold. The number of lots for relocated people stood at 52.2% compared with the total detached housing site. Lots for relocated people were deployed near subway stations or commercial areas, and general housing lots to be sold, to sloping areas (about 231m^2) around Mt. Jeongbal and suburban area (198~231m^2). Of the 2,796 general housing lots, 935 were housing sites deployed to the east of Mt. Jeongbal. The supply of detached housing site was completed at the end of 1996.

a. Project Overview

Table 2-9 | Project Overview

Purpose and characteristics	- Garden city boasting artistic and cultural facilities - Central city west of the Seoul Metropolitan Area with self-reliance functions - Advanced base for the unification of South and North Korea
Location	- Located 20km northwest of the Gangbuk area in Seoul, Goyang-gun, Gyeonggi-do
Area	1,573 ha
Population	276,000 people (reduced from 300,000)
No. of households	69,000 households
Project implementer	Korea Land Corporation
Transfer period to local government	1993

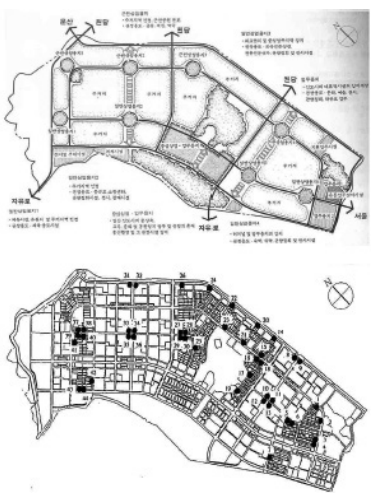
b. Land Use Plan

Table 2-10 | Land Use Plan

(Unit : ha, %)

Total	1,573.0	100.0
Residential area	528.3	33.6
Commercial area	45.7	2.9
Business area	106.3	6.8
School	59.7	3.8
Public office	9.0	0.5
Road	304.7	19.4
Park and green space	372.9	23.7
Others	146.4	9.3

Table 2-11 | Characteristics of Ilsan New Town Plan

	Ilsan New Town	
Living zone plan	- Plan as 1, 2, and 9 large, medium-, and small-scale living zones, respectively, centered on Mt. Jeongbal. - Since the city stretches from south to north, access to the city center is deployed to south and north evenly. - For the business site, designated a large scale in the city center; note, however, that specialized business facilities are clustered in the south of the city, which is the entrance to the city. - Living convenience facilities within the new town are mainly located along the principal road on the outskirts of the residential area, and are in contact with mainly public sites or parks; also located in the area connected to a pedestrian road	
Street network plan	- The network consists of 6 principal roads for entry into the city, and access is planned through two roads on the left and right centered on the existing Ilsan Station. - Supplementary principal roads are built at the central service axis along the subway route, with the concentration/ distribution roads having a lattice pattern circulating the city.	

	Ilsan New Town	
Park green area plan	- Developing the central green area axis connecting Mt. Jeongbal, city center, lake park, and natural green area axis in the outskirts - Developing the neighborhood park axis connecting the railway and subway stations crossing two medium-scale living zones	

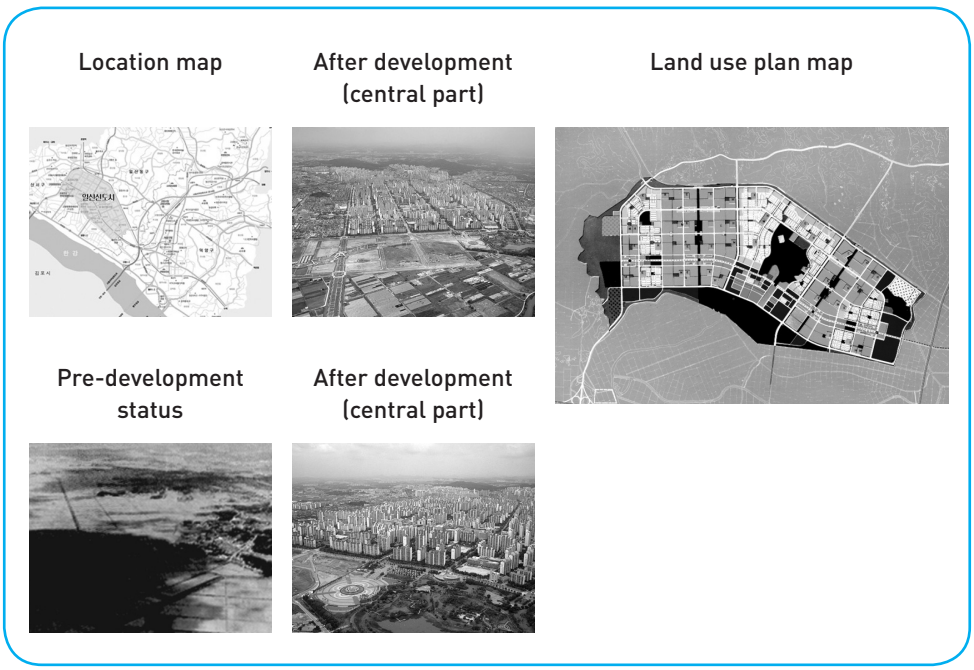
c. Road and Spatial Structure

The basic framework of the road network of the Ilsan new town consists of 3 principal roads stretching from southeast to southwest side by side and 3 entry roads connected with motorways. Among the 3 principal roads, 5 subway stations are deployed along the central road; commercial areas are deployed in a linear form centered on each subway station. Each residential area is accessed by beltways.

d. Park and Green Area

Not only has the Ilsan new town secured more green areas and parks than other new towns; it also boasts of a well-designed green area system. Mt. Jeongbal, located at the center of Ilsan, becomes the core of the urban green area system. The lattice-type pedestrian road network centered on Mt. Jeongbal enables the connection of facilities within an APT complex such as schools, shopping malls, and parks. The APT complexes, each housing complex, and the city center are accessible via walking and bicycles. Furthermore, it can handle surface water during the rainy season. In the southwest of the city, a large-scale green area and a lake are artificially built. Equipped with a flood adjustment function, this lake park helps create an image as a garden city by attracting water front leisure facilities and various cultural facilities.

Figure 2-13 | Land Use Plan of Ilsan New Town and View of the City



Source : Homepage of Goyang City Hall

2.1.4 Pyeongchon New Town

The development of Pyeongchon new town was implemented in August 1988 as part of the 2 million homes construction plan in the Seoul Metropolitan Area where no development sites were available. Located in a major spot of the Seoul Metropolitan Area, i.e., between the Gyeongsu Industrial Road (National Highway 1) and National Highway 47 within a 20km radius from the city center of Seoul, the Pyeongchon new town is a dwellings-oriented town. The city was developed through a pleasant urban environment secured with convenience facilities in everyday life and green spaces, accommodating various levels of income brackets. It was built as a new central business area of the Anyang large city zone with 1 million people.

In the sectors of population and housing, APTs that can accommodate 168,000 people were mainly planned for 42,000 households as the average population density of Gwacheon City, Mok-dong and Sanggye-dong in Seoul, whereas Bundang or Ilsan kept its features as a garden city. The reason for Pyeongchon's high population density is that Pyeongcheon's land prices are relatively higher, and Anyang's urban function transfer to Pyeongchon was promoted since Anyang is a small area. Having different features and functions from other cities, Pyeongchon was planned to be in line with the broad area transportation network as part of the function distribution and linkage to the Seoul Metropolitan Area, and to be mature

as a more pleasant, convenient urban environment. With the green area system centered on pedestrians, a human-oriented, pleasant, and safe urban environment was developed, and Pyeongchon was built as a clean city with self-reliant functions.

First, Pyeongchon is an area where traffic is heavy considering the regional features. In fact, there were traffic difficulties even before the new town development. Thus, 14 lines of roads (106.7km) were newly built or expanded for smooth traffic and to promote development of the surrounding areas as part of the broad transportation network expansion plan for expanding the existing roads. By building the Gwacheon Line subway (15.7km) across east to west of the Pyeongchon new town and establishing the transportation network running in all directions, the transportation environment in the southern part of the Seoul Metropolitan Area was improved.

Second, a human-oriented, pleasant, and safe city environment was developed with the pedestrian-focused green area system. By applying urban design on the entire city, the city was organically integrated, and a functional, beautiful environment was developed. With the south and north green area axes of the central park in the city center, Hakunpark along the Hakuicheon stream and Free Park enhanced the existing good areas in the forest. The pedestrian moving path was completely separated from the roads and linked 6 neighborhood parks, 25 children's parks, green areas, and plazas. In this manner, a safe walking environment was developed. Moreover, through cultural relics examination at the initial stages of new town construction, cultural relics including dolmens scattered within the development site were relocated and restored to ensure harmony between nature, culture, and the new town.

Third, the Pyeongchon new town was built as a pollution-free, clean city with self-reliant functions. To secure the self-reliant function, the city attracted various everyday convenience facilities,such as administration, business, education, and distribution and enabled organic growth with the urban infrastructure and principal transportation network. Pyeongchon was also built as a pollution-free, clean city by intercepting environmental pollution sources through community energy supply facilities using clean energy and building sewer treatment plants and waste incineration facilities so that nature and humans can live together in harmony. Pyeongchon was built as a new town where 42,000 households can live, and an administrative and legal town was formed including a city hall and court centered at Beolmal Station. Around Beomgye Station, a shopping and financial town was developed. In this way, Pyeongchon grew as a central commercial and business area of Anyang City. The park and green area system was systematically established in Pyeongchon, and a pleasant, beautiful city was developed. Various convenience facilities were established quickly. Pyeongchon is changing into a city with a high level of convenience for everyday life amid a clean environment.

a. Project Overview

Table 2-12 | Project Overview

Purpose and characteristics	- New central business area in Anyang City - New town within the city
Location	- Located 20km south of Seoul, Anyang City in Gyeonggi-do
Area	494.7 ha
Population	170,000 people
No. of households	42,500 households
Project implementer	Korea Land Corporation
Date of transfer to local government	1993

b. Land Use Plan

Table 2-13 | Land Use Plan

(Unit : ha, %)

Total	494.7	100.0
Residential area	193.6	39.1
Commercial area	18.3	3.7
Business area	4.1	0.8
School	34.3	6.9
Public office	15.3	3.1
Road	112.7	22.8
Park and green space	70.2	14.3
Others	46.2	9.3

c. Road Network and Spatial Structure

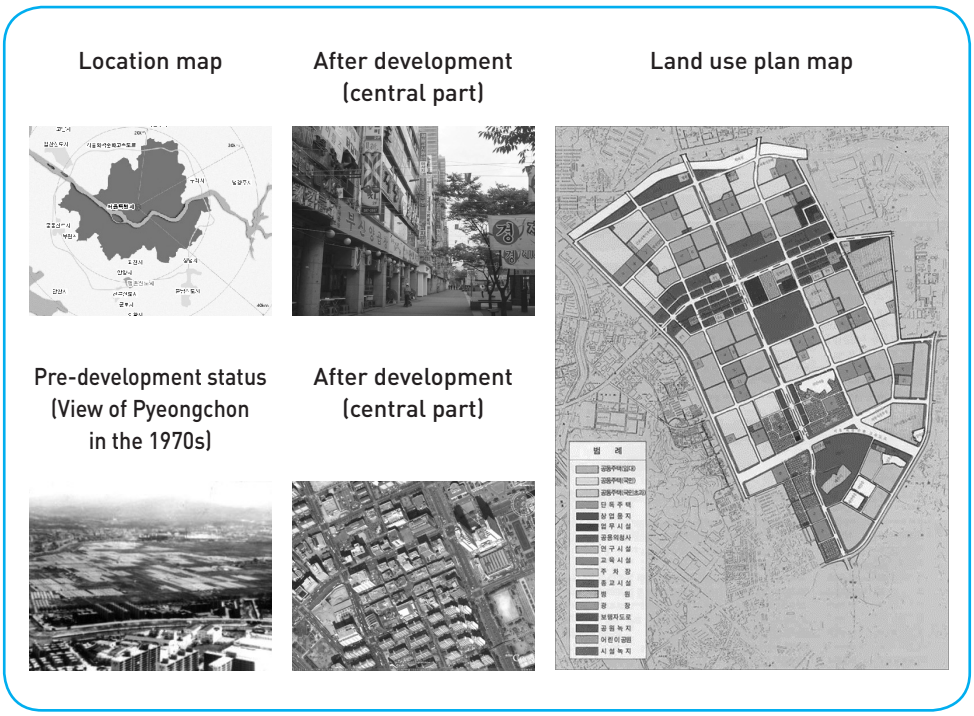
The road network of Pyeongchon is of the lattice type so that it can be easily patterned after Anyang's old town road network. Two principal roads crossing the city center in the south and north and east and west directions become the basic framework of the street network. Subway stations were deployed at the easternmost and west directions of the principal road, with the central commercial area planned along the principal road in between the subway stations and connected with the existing town's central commercial area. The central part of

the new town consists of Central Park and city hall and cultural facilities relocated from the old town. They are deployed in the central part of the city where two principal roads cross.

d. Park and Green Area

Since there is no hilly area or river to be used as part of the green area system, the green area system consists of artificially built parks and trails for pedestrians. The main axis of the green area system is the south-north axis connecting the Central Park deployed at the center of the city, neighborhood parks at the southernmost part, and Hakuicheon stream in the north. The pedestrian road network of the lattice type connects parks within housing complexes as well as with the Central Park; thus, the green area is equipped with one system within the city.

Figure 2-14 | Land Use Plan of Pyeongchon New Town and View of the City



Source : Homepage of Anyang City Hall

2.1.5 Sanbon New Town

Sanbon new town's commercial and business site ratio is the lowest among the 5 new towns, with no consideration given to self-reliant functions except administrative functions. On the other hand, the residential site area ratio is remarkably high, since the city was developed to supply housing for ordinary people. Thanks to locational conditions, i.e., surrounded by mountains, pleasantness is rated higher than other cities despite the insufficient green area spaces.

a. Project Overview

Table 2-14 | Project Overview

Purpose and characteristics	- New central business area in Gunpo City - New town within the city - Garden city with splendid natural environment
Location	- Located 25km south of Seoul, Gunpo City in Gyeonggi-do
Area	418.9 ha
Population	170,000 people
No. of households	42,500 households
Project implementer	Korea Housing Corporation
Date of transfer to local government	1993

b. Land Use Plan

Table 2-15 | Land Use Plan

(Unit : ha, %)

Total	418.9	100.0
Residential area	191.2	45.6
Commercial area	22.8	5.4
School	32.5	7.8
Public office	8.7	2.1
Road	54.5	13.0
Park and green space	63.6	15.2
Others	45.6	10.9

c. Road Network and Spatial Structure

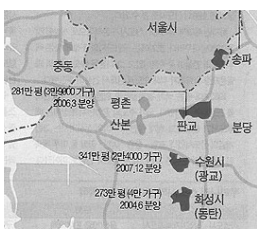
The road network of Sanbon is designed to function as one city by combining the new and old towns. The principal road along the subway route connects the north of the old town and that of the new town. Another principal road that vertically crosses connects the north of the new town and south of the old town. In addition to these two principal roads, a beltway exists to help the residential area of the new town and the existing residential area in the suburban area of the old town combine into one. The subway station was deployed in the center of the city where the two principal roads cross, which helps the new and old town combine easily. The commercial area centered on the subway station and the city center consist of Central Park and city hall; the cultural facilities adjacent to the commercial area make up the entire center of Gunpo City, including the Sanbon new town.

d. Park and Green Area

The green area system of the Sanbon new town naturally leads to mountainous areas surrounding it on three sides to make it an internal city. Parks and green areas are deployed in many places to view mountains from the internal city. In particular, the top of Mt. Suri can be viewed anywhere in the city. The pedestrian road passing through the residential area starts from the main points of the suburban mountainous areas, passes through parks within residential areas, and connects to the Central Park located on a small hill at the center of the city.

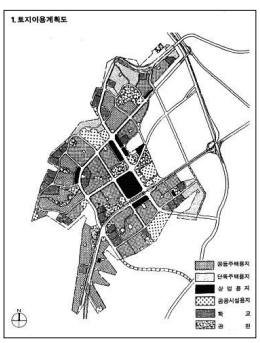
Figure 2-15 | Land Use Plan of the Sanbon New Town and View of the City

Location map



After development (central part)

Land Use Plan Map



Pre-development status (View of Sanbon in the 1980s)

After development (View)

Source : Homepage of Gunpo City Hall

2.1.6 Jungdong New Town

In the Jungdong new town, commercial sites were excessively designated to secure development profits by three agencies' competitive participation, which was determined according to high economic efficiency of urban development. Thus, about 70% of commercial sites were not sold at the initial stages. Note, however, that most commercial sites are currently developed. Road ratio is over 26%, with the planned roads planned to be excessive wide roads. As such, city spatial facilities including parks and green areas are the smallest among the 5 new towns, and pleasantness is consequently low.

a. Project Overview

Table 2-16 | Project Overview

Purpose and characteristics	- New central business area in Bucheon City - Urban outskirts residential area at the center of the industrial area between Seoul and Incheon - New town within the city
Location	- Located 20km west of Seoul, Bucheon in Gyeonggi-do
Area	543.9 ha
Population	170,000 people
No. of households	42,500 households
Project implementer	Korea Housing Corporation, Korea Land Corporation, Bucheon City
Transfer period to local governments	1993

b. Land Use Plan

Table 2-17 | Land Use Plan

(unit : ha, %)

Total	543.9	100.0
Residential area	180.4	33.2
Commercial area	51.7	9.5
Business area	72.5	3.8
School	42.5	3.1
Public office	16.6	7.8
Road	133.3	24.5
Park and green space	66.3	12.1
Others	105.1	19.3

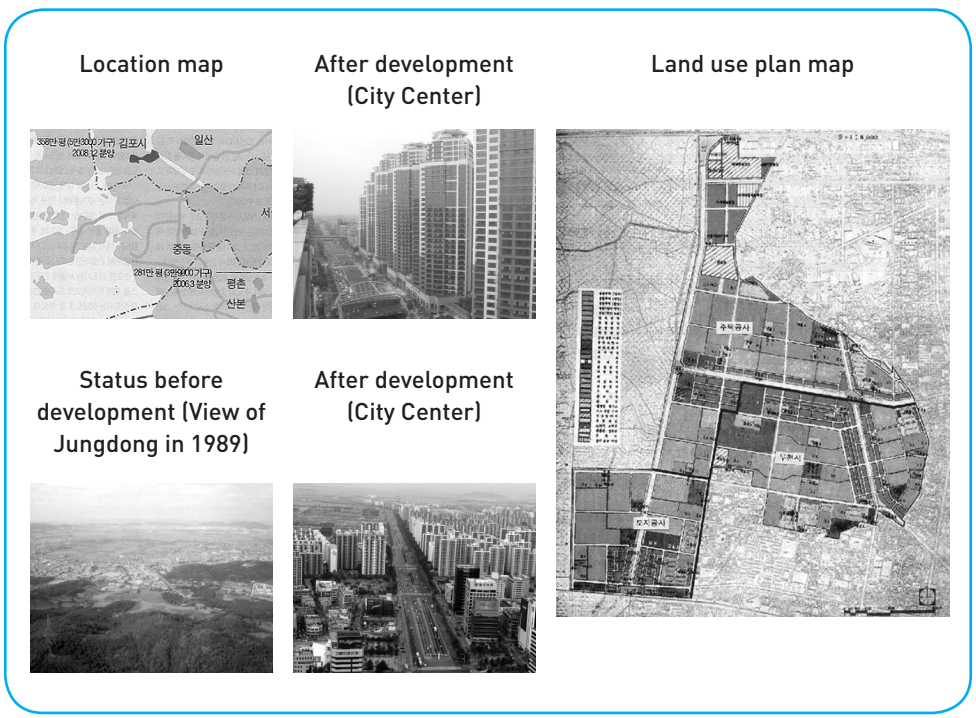
c. Road and Spatial Structure

The street network of the Jungdong new town is of simple lattice type so that it can be patterned after the road network of the Bucheon old town. The main principal road passing through the center of the city from east to west is directly connected with the old town's main principal roads; thus, the old and new towns have been combined. The central commercial area of the new town is deployed in linear form according to the main principal road, bending from the easternmost part to south and naturally combining with the old town's central commercial area. The city hall and cultural facilities to be relocated from the old town are deployed at the center of the city along with Central Park. In this manner, the old and new towns share one city center.

d. Park and Green Area

Jungdong is a new town built on a monotonous plane; therefore, parks and green areas were artificially developed. The park green area system of the Jungdong new town is of the lattice type, crossing the street network. At the center of the lattice system, the Central Park is deployed; from the park, the pedestrian road network stretches in all directions. The pedestrian road network is part of the road network, connecting parks within housing complexes and linking them to the Central Park.

Figure 2-16 | Land Use Plan and View of the Jungdong New Town



Source : Homepage of Busan City Hall

3. New Town Construction in Phase 2 of the Seoul Metropolitan Area: After the 2000s

3.1 Overview

The phase 2 new towns are located within 20~40km from the city center of Seoul and are equipped with a pleasant residential environment and self-reliant functions, along with a transportation system that connects to the surrounding areas, including Seoul. These new towns have been implemented to solve the overpopulation problem and ensure residential stability in the Seoul Metropolitan Area. For the phase 2 new towns, 10 new towns-Pangyo, Dongtan, Gimpo, Paju, Gwanggyo, YangjuOkjeong, YangjuHoecheon, Songpa, Pyeongtaek, and Geomdan starting with Hwaseong and Dongtan-began development in 2001. The construction period is 15 years from 2001 to 2015; the total area is 13,075ha, and 1.53 million people can be accommodated. The development plan was announced aiming at the construction of new towns based on the planned city concept, which can shift the negative perception of new towns in the past and replace it with small-scale, dispersed development. Although mountainous areas or hills were damaged for new town development in the past, the new towns in the 2000s are planned to preserve excellent green areas in principle and consider the water circulation type of an eco-city and its environmental capacity. In this manner, the need for sustainable new town planning has been emphasized.

3.2 Pangyo New Town

The area where Pangyo new town is located is only 20km away from the Seoul Gangnam region and is a convenient area in terms of transportation, since Gyeongbu Expressway, Seoul Beltway, and national support provincial roads 23 and 57 cross. The Pangyo new town was designated as the south green area of Seongnam City in May 1976 and was preserved as an area where development was impossible including building restrictions. With the development possibility predicted before the designation of the scheduled development site (May 1998), however, due to the severe demand for housing in Gangnam, Seoul, many social debates ensued such as environmental destruction and real estate speculation. Moreover, as the building construction restriction expired at the end of 2001, a policy to implement a housing site development was decided as a means of increasing housing supplies in the Seoul Metropolitan Area through the rational urban development of Seongnam City and planned public sector-led development.

As national interest was heightened thanks to the prime location conditions of the Pangyo new town in the south of the Seoul Metropolitan Area, there were requests regarding development profits, and participation in development by local governments. There was also supplementation related to the lack of self-reliant functions and various infrastructures, including transportation emerged as important issues on new town development. Gyeonggi-do, Seongnam City, Korea Housing Corporation, and Korea Land Corporation jointly participated in the new town development project. In this manner, the development project process has become complex.

Considering these conditions, the development direction was set when Pangyo new town was developing, aiming at developing pleasant housing complexes, an eco-city where nature and humans can coexist in line with the housing demand in the southern part of the Seoul Metropolitan Area, and business strongholds in the southeast in the Seoul Metropolitan Area. In actuality, the Pangyo new town was planned as follows: to develop a pleasant urban environment by lowering the population density of the existing new town, to preserve the existing natural eco-functions fully such as Geumtocheon stream and Unjoongcheon stream, and to separately deploy the complexes for the use of urban support facilities based on the southeast business area in the Seoul Metropolitan Area. All in all, the Pangyo new town was planned to grow into a stronghold city in the southeastern part of the Seoul Metropolitan Area.

Table 2-18 | Main Details of the Pangyo New Town

Project Overview	Plan Objective
· Location: Around 10 dongs plus Pangyo-dong, Bundang-gu, Seongnam-si · Area: 929.4㏊ · Population: 87,882 people · No. of households: 29,294 · Population density: 95 people/ha · Project period: 2003~2009	· Developing an eco-city where nature and humans coexist · Forming a pleasant housing complex in response to the housing demand in the south of the Seoul Metropolitan Area · Nurturing a business stronghold in the southeast of the Seoul Metropolitan Area
	Development Strategy
	· Plan reflecting wind inflow/outflow road · Developing natural, water-friendly rivers and eco-pilot villages · Adoption of a single housing site village concept · Adoption of automatic waste collection systemÐConstruction of a u-City

3.3 Dongtan New Town

As a stronghold city in the southeastern part of the Seoul Metropolitan Area and adjacent to Suwon, Osan, and Yongin, the Dongtan new town is an outstanding area in terms of location considering its proximity to Samsung Electronics and the Hwaseong Local Industrial Complex.

Table 2-19 | Main Details of the Dongtan New Town Plan

Project Overview	Development Idea
· Location: Around Dongtan-myeon, Taean-eup, Hwaseong-si · Area: 903.6㏊ · Population: 124,326 people · No. of households: 40,921 · Population density: 137 people/ha · ĐProject period: 2001~2007	· Adoption of Korea's first Master Plan system · Radial-shaped city design preserving the natural topography · Developing the skyline of the panoramic city center · Water-friendly new town · Construction of a compound complex with 66-story building, the largest scale in Korea · Construction of compound culture complex and u-City
	Living Zone Plan
	· 1 industrial complex, 2 large-scale living zones, and 5 medium-scale living spheres · Developing a city center space organically linking with the central park and green area system

In the Dongtan new town (2), 111,413 homes* (279 thousand people) will be supplied. In the first half of 2012, the sales of those homes will be conducted and the residents will occupy the homes from the second half of 2014. In addition, 25,000 Nest Homes (Bogeumjari Home) are planned to be provided.

* Total: 111,413 homes; Detached houses: 2,577; APTs: 93,835; Residential and commercial buildings: 15,001 60m² or less: 60~85m² or less: over 85m² = 21%:48%:31% (based on the number of households)

The Dongtan new town (2) is a central city in the south of the Seoul Metropolitan Area connecting the southern region of Seoul, Pyeongtaek and Cheonan and will be developed as a central city for transportation, industry, logistics, and education in linkage with the surrounding industrial facilities. The construction of KTX between Suseo and Pyeongtaek (Dongtan Station of KTX), Beltway 2, and Gyeongbu Expressway 2 are planned to be completed between 2014 and 2015. In this way, the new town will play a role as the center of transportation in the southern part of the Seoul Metropolitan Area. In particular, access to Seoul within 20 minutes through the Seoul Metropolitan high-speed railway (KTX) and access to all of Korea within 2 hours becomes possible; thus, innovative public transportation convenience is offered for corporate activities and residents. Furthermore, through the complex transit center planned to be built within the broad area business complex, transfers

between various modes of public transportation such as KTX and buses along with bicycles becomes possible within 10 minutes. In addition, 207km of bicycle roads (for transportation means and for leisure) will be constructed to raise the bicycle as a mode of transportation ratio to 20%, which is on par with advanced countries.

Parking buildings have been planned in the commercial areas for easy access to parking, including for the new town residents. The new town also has geographical advantages to grow into an industrial and logistics city, given its location in the southern region of Seoul, the center of cutting-edge companies including Samsung Electronics, Pyeongtaek Port, Pyeongtaek, and Cheonan Distribution Complex. In the broad area of the business complex (1,496 thousand sqm) whose size is equivalent to the Yeouido business area, a convention center, business hotel, global companies' head offices and branches, business district, and cultural facilities are scheduled to be built. For a cutting-edge business cluster linked with foreign-invested companies and adjacent cutting-edge businesses within the area, the Dongtan Techno Valley (1,430 thousand m^2) is planned to be developed; a foreigners-only residential complex is also planned to offer a convenient work environment for proximity between home and work. At least 15.8% of self-reliant facility sites were planned to build a self-reliant new town, and the Dongtan General Industrial Complex ($2.0km^2$) is currently being built in connection with the new town for company transfers within the business area and to attract cutting-edge businesses.

Figure 2-17 | Location Map

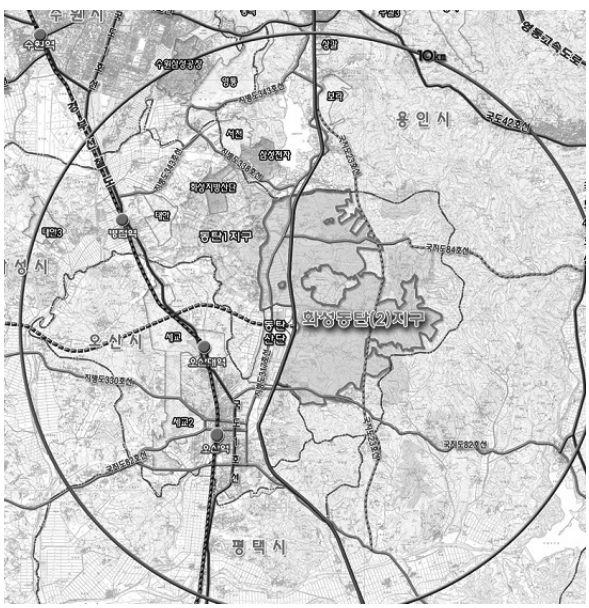
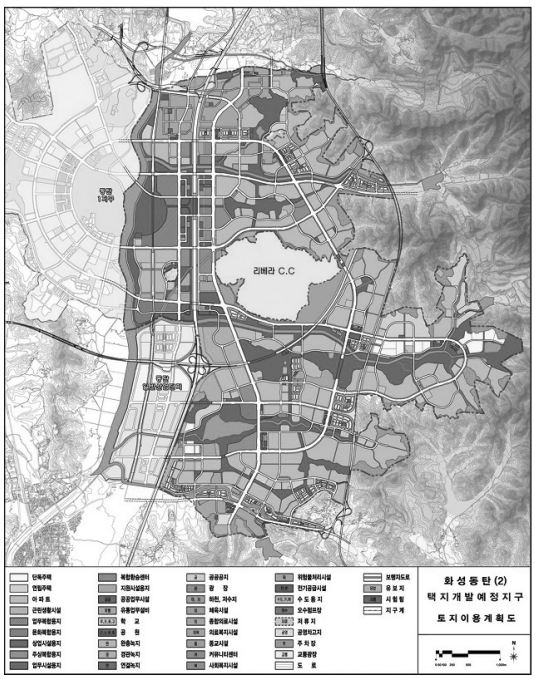


Figure 2-18 | Land Use Map



3.4 Gimpo New Town

Gimpo City is located 26km from the Seoul city center, with Incheon International Airport, Gimpo Airport, and Seoul Beltway close by. In view of all these, the Gimpo new town belongs to a growth management region in terms of the Seoul Metropolitan Area reorganization plan as a strategic point of transportation in the northwestern part of the Seoul Metropolitan Area. Gimpo new town development was implemented to secure a stronghold for balanced development in the northwestern part, expand infrastructure, and to contribute to housing supply.

Table 2-20 | Main Details of the Gimpo New Town Plan

Project Overview	Development Idea
· Location: Around Yangchon-myeon, Unyang-dong, Janggi-dong, Gimpo-si · Area: 1171.5㏊ · Population 162,565 people · No. of households: 58,570 · Population density: 139 people/ha · Project period: 2006~2012	· Establishment of green traffic system and sidewalk and road separation system · Deployment of eco-pilot villages and community-inducing detached houses · Theme tourism industry stronghold city · Developing a community corridor
	Living Zone Plan
	· Deployment of detached houses on the hill areas around Mt. Modam and Mt. Gahyeon and APTs centered on a flat area · Deployment of district-centered commercial, theme commercial, broad area commercial, and hub business functions · Deployment of urban support facility land by categorizing into research, development, and production

3.5 Paju New Town

The Paju new town is the area where development pressure is high because of its proximity to the Ilsan, Gyoha, and Geumchon new development districts. Therefore, various development activities carried out individually need to be reorganized and managed systematically. Paju was designated as a new town to develop a stronghold in everyday life in the northwestern part of the outdated Seoul Metropolitan Area as well as the base for exchange between South and North Korea.

Paju is just 15km away from the boundary with Seoul and 2km from the Ilsan new town; hence the added development pressure. According to the basic urban planning established in 2000 (site planned to be a city), the development plan of some parts (Unjeong district: 4,692 thousand m^2) is being established. The construction of the double track of the Gyeongui Line (scheduled to open in 2008) and Jayuro 2 was planned. Furthermore, the 4,385 thousand m^2 area that urgently needed planned management in the Unjeong district was additionally designated. In this regard, Paju new town development focused on the construction of a hinterland gateway city to cope with the cooperation era between South and North Korea, at the same time resolving the housing shortage in the northwestern part of Gyeonggi. As for the development size, Paju plans to accommodate 142,000 people (population density: 175 people/ha; Bundang: 198 people/ha; Ilsan: 176 people/㏊) and 47,000 homes. With regard to the transportation measures, the construction of Jayuro 2

(12.5km) included in the Goyang/Paju transportation measures, 7 lines of 41.3km including a 4.4km road between Gimpo and Gwansan, and light rail (11.6km) (funded by private capital) between the Unjeong Station and Publication and Cultural Complex is expected to solve traffic problems in the surrounding areas including Goyang, Ilsan, and Paju.

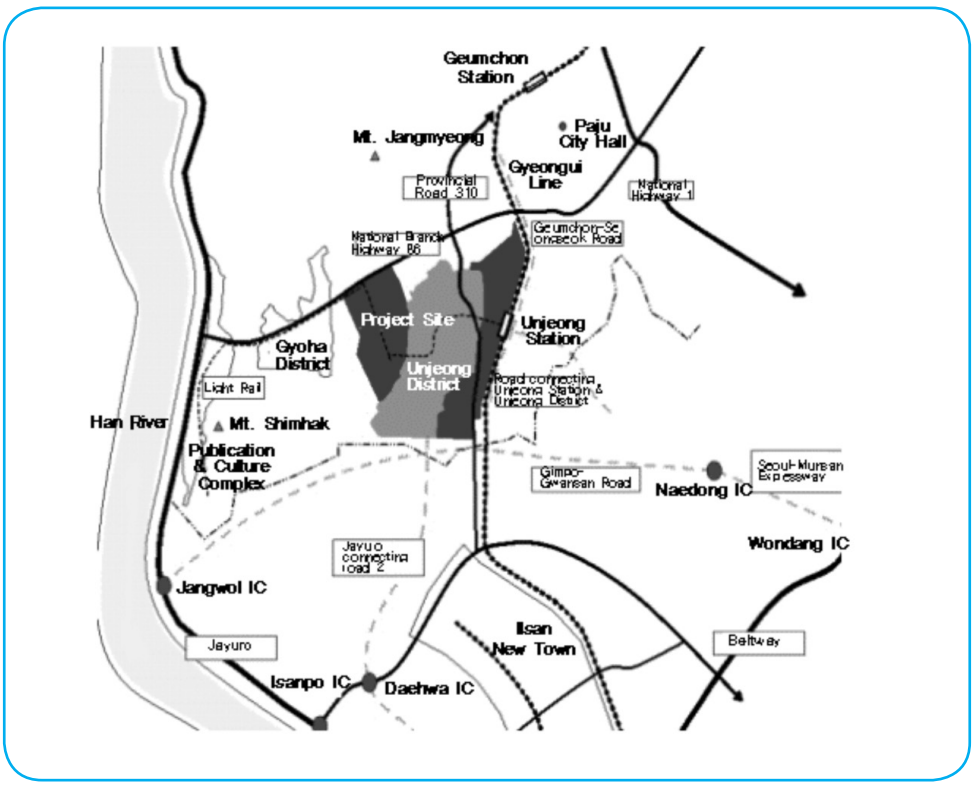
In the Paju new town, pleasant urban spaces are planned to be developed by securing 27.7% of green area out of the total area; a large-scale agricultural eco-park, weekend farms, eco-marsh, and eco-water channel are also scheduled to be built. Actually, a water circulation type of clean city is planned to be built, i.e., treating sewerage generated within the new town and using it for the Lake Park (about 200,000m^2) and water for agriculture.

Within the area, private companies already completed 8,800 homes in 8 complexes, or they are under construction. In this context, residential-centered development is unavoidable by securing infrastructure such as schools, but the Paju new town plans to acquire self-reliant functions with a publication and culture complex and an international exhibition center in the adjacent area.

Table 2-21 | Main Details of the Paju New Town Plan

<table>
<tr><th>Project Overview</th><th>Development Idea</th></tr>
<tr><td rowspan="3">· Location: Around Gyoha-eup, Paju-si
· Area: 1647.7㏊
· Population: 216,845 people
· No. of households: 80,054
· Population density: 132 people/ha
· Project period: 2003~2013</td><td>· Water circulation-type, water-friendly eco-city
· Establishment of Blue Network connecting streams and artificial lakes
· Establishment of Green Network linking Mt. Jangmyeong, Mt. Shimhak, Mt. Hwangryong, hill areas, and central park
· City with cutting-edge information infrastructure, city offering compound culture experience</td></tr>
<tr><td>Living Zone Plan</td></tr>
<tr><td>· Medium-scale living zone of nearby Unjeong Railroad Station
· Wa-dong small-scale living zone: Supplementation of zone functions of nearby Unjeong Railroad Station
· Mok-dong small-scale living zone: Center of culture, welfare, information, and public administration
· Dongpae small-scale living zone: Hub of culture and commerce in the south separated with the Central Park and district principal roads</td></tr>
</table>

Figure 2-19 | Location Map of Paju District



4. Specialized Complex New Town (After on the 2000s)

4.1 City Construction and New Town Project Led by the Private Sector

4.1.1 Background of the New Town Project

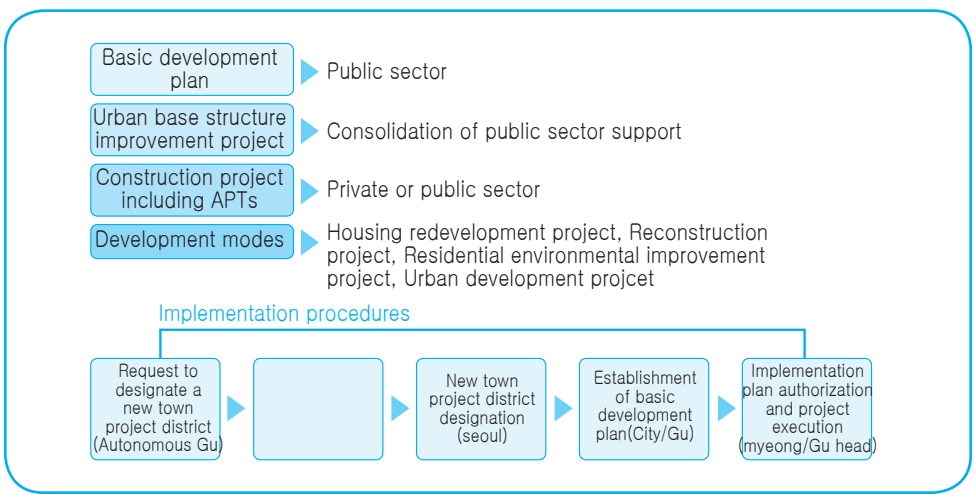
The main reason the New Town Project emerged as a Seoul Mayoral Election pledge is the balanced development between Gangbuk and Gangnam, housing supply, and prevention of small-scale development without considering the environment. Since then, two mayors have implemented the New Town Project to improve a relatively outdated Gangbuk. Lee Myung-bak, a former Seoul Mayor, implemented the New Town Project for the first time; since then, redevelopment projects under the name of New Town have been implemented in various areas in Seoul.

The New Town Project as defined by Seoul City is a new redevelopment of an existing town, implemented to address a problem with the previous private sector-led development characterized as development without considering the environment and without sufficient thought for urban infrastructure. General housing redevelopment has been small-scale development centered on individual housing value, focusing on private sector development

convenience to date. Note, however, that the New Town development is a private project that can be viewed as a comprehensive urban planning to expand sufficient urban infrastructure targeting a suitable scale of living zone.

Nonetheless, there are still many obscure issues in terms of the keyword "Balanced Development," which is one of the major purposes of the New Town Project. It is confusing whether Gangbuk needs to follow in the footsteps of Gangnam, whether the Gangbuk residents should have balanced assets through profit-taking from real estate like those living in Gangnam, or whether urban infrastructure comparable with that of Gangnam should be established. The existing town, Gangbuk area-unlike Gangnam that was developed as a new town-can hardly secure explicit infrastructure, and floor space index or residential density can be greater than Gangnam. In view of all this, Balanced Development can be a difficult objective to achieve in reality.

Figure 2-20 | New Town Development Modes



Source : Seoul Metropolitan City

4.1.2 Status of New Town Project Implementation

Seoul implemented the New Town Project by designating 35 new towns and balanced development promotion districts as of February 2010. Starting with 3 pilot new town project districts-Wangshimni, Eunpyeong, and Gileum in 2002-12 districts and 11 districts were designated in 2003 and 2005, respectively; 26 districts were designated in three phases. In 2003 and 2005, 5 and 3 districts were designated as balanced development promotion project districts, respectively, with Sewoon Shopping Mall designated as a reorganization promotion district in 2006 (see Table 52). Looking into the New Town Project by designated district, 600,000-1,000,000m^2 recorded the highest frequency, with two districts measuring

3 million m2 or more (see Table 53). Concerning construction commencement, starting with 4 districts in 2006, and 6 districts began construction in 2007, 2008, and 2009, respectively, whereas 10 districts commenced construction in 2010.

Table 2-22 | Newtown Area of Seoul

Category	Period (Y/M/D)	Designated District
Pilot New Town	2002.10.23	3 districts including Eunpyeong, Gileum, and Wangshimni
Second-Phase New Town	2003.11.18	12 districts including Donuimun, Noryangjin, and Hannam
Third-Phase New Town	2005.12.15	11 districts including Jangwi, Bukahyeon, and Shinlim
Balanced Development Promotion District	2003~2005	9 districts including Cheongryangri and Mia
Phase 4 New Town		Designation for real estate market stability

Source : Seoul Metropolitan City

Table 2-23 | Newtown Local Area of Seoul

Area Unit: m^2	Designated Districts
200,000~500,000	4 districts (Donuimun, Yeongdeungpo, Wangshimni, Cheonho)
500,000~661,157	4 districts (Banghwa, Junghwa, Shinrim, Sanggye)
661,157~991,735	9 districts (Shiheung, Macheon, Noryangjin, Bukahyeon, Seungin, Heukseok, Jeungsan, Jeonnong, Dapshipri, Mia)
991,735~1,157,024	3 districts (Hwigyeong, Gajaeul, Ahyeon)
1,157,024~1,867,851	3 districts (Hannam, Gileum, Shingil, Jangwi)
3,305,785 or more	2 districts (Eunpyeong, Shinjeong)

Source : Seoul Metropolitan City

4.1.3 Case of New Town Project Area (Eunpyeong New Town)

The Gupabal area where Eunpyeong New Town is located is the entry point to the northwestern region of Seoul and is in the suburban area adjacent to Goyang City. Gupabal is an area boasting a natural landscape surrounded by natural parks, neighborhood parks, and Changreungcheon Stream along with Mt. Bukhan. Gupabal's development and building construction were restricted owing to the development restriction area, natural green area, and military facility protection area designations in 1970. Note, however, changes began to occur including the location condition that Eunpyeong New Town is located near Tongil-ro (national highway) which leads to Panmunjeom, the opening of a subway line according to Seoul's expansion, and the impacts of Ilsan new town development.

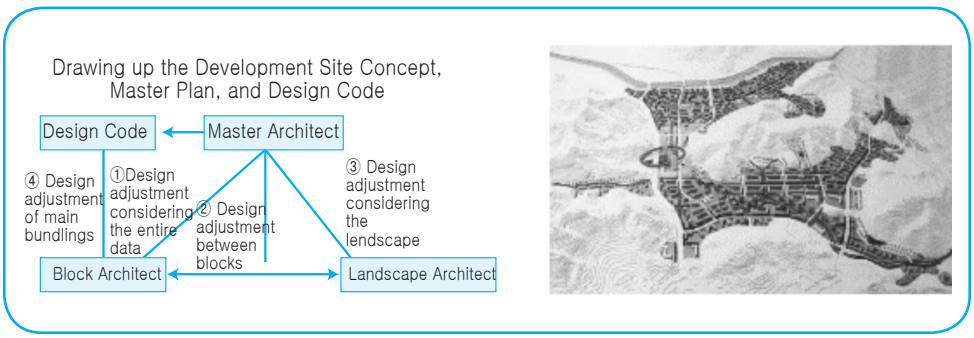
Table 2-24 | Project Overview

Location	Around JingwanNae/Woe-dong and Gupal-dong, Eunpyeong-gu			
Area	3,492,000m²			
No. households	16,172 households (rental: 5,006; sales: 11,166)			
Category	Total	District 1	District 2	District 3
Area thousand m²)	3,492	777	727	1,988
No. of houses to build	16,172	4,660	5,134	6,378
Project period	2004~2011	2004~2008.5	2004~2009	2005~2011

The Eunpyeong New Town Project fundamentally seeks to cope with the luxury home demands and housing price stabilization in Gangnam, but it began from a bigger framework to promote balanced development to solve spatial bipolarism in Seoul. In this context, the Eunpyeong New Town Project actually aims to make a human-friendly eco and garden city where nature, landscape, communities, and culture are in harmony according to the development direction of an eco and garden city such as a resort, a city where various classes live together in harmony. As a measure against the private sector-led redevelopment reorganization of the outdated inferior villages of the existing town, the project is designed to increase the role of the public sector and pursue planned development based on a living zone, as well as the use of various urban development modes according to the urban circumstances.

As part of the four-year plan of the third elected mayor, the New Town policy was planned, and 3 pilot districts including Eunpyeong new town districts were announced in October 2003. Furthermore, the design mode through master architects consisting of urban design, architecture, and landscaping experts and the winner of the design contest was adopted for 3D urban development rather than 2D land use plan establishment as seen in previous housing site developments.

Figure 2-21 | Master Plan and Design Code



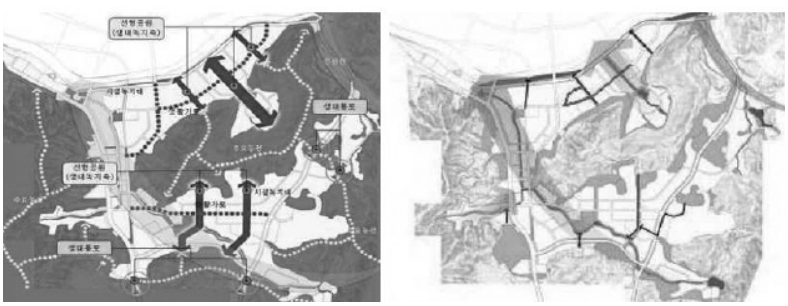
Seoul appointed SH Corporation as project implementer, sought to harmonize preservation and development, and aimed to pursue the direction of contributing to ordinary people's residential stability by developing a pleasant new town with residential, commercial, ecological, and cultural functions including building national rental housing with suitable population density, which was implemented as a national project. In July 2003, the project planned 12,500 homes; when the district 1 APT design was announced in September 2003, the design guidelines including "Five Nones-walls, raised spots, breast walls, power poles, and sign boards" and "Five Possessions" (natural environment where people live together in harmony, neighborhood sharing with neighbors, streets conducive for walking, places people want to visit, and spaces with good views) were presented.

Figure 2-22 | Design Guidelines

Seoul City established and announced a plan to supply 14,000 homes (general sales: 9,250 homes/rental: 4,750 homes) in October 2003, deploying rental homes and homes to sell in a mixed manner based on a general social concept. The project size was planned based on the environmental impact assessment. Currently, the height restriction was eased to a maximum 15 stories according to the military protection facility district; the concept of average number of floors was also adopted.

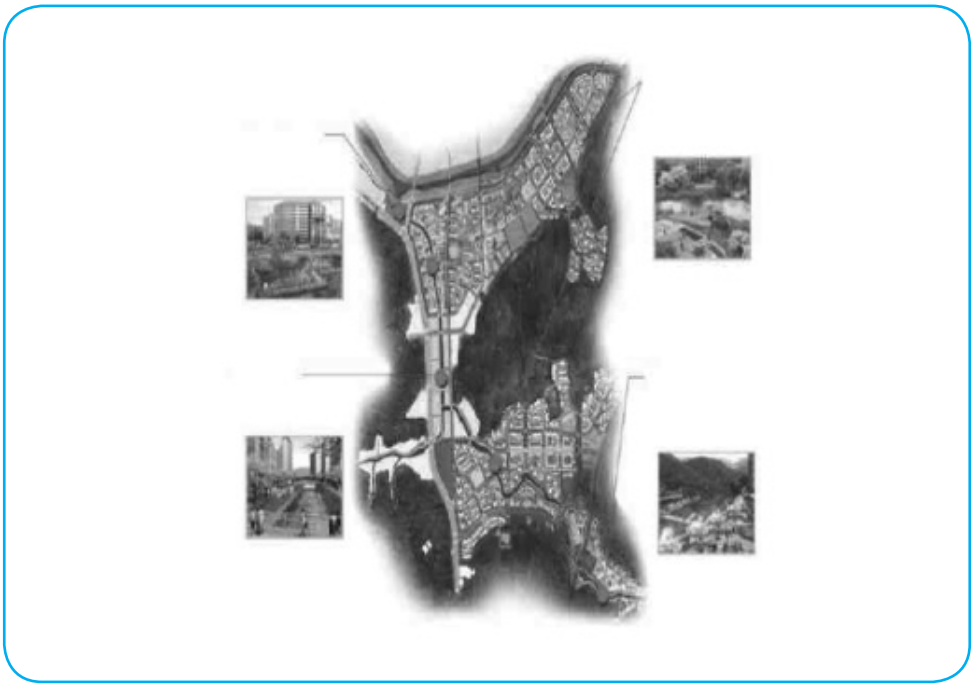
The project aims to make an eco and garden city and a city where various classes and households can live together in harmony as the basic direction of the project. Based on the location's blessed natural conditions including Mt. Bukhan National Park, the buzzwords Green Network, Blue Network, and White Network were set. The green network was established, including not only the three linear green area axes connecting the Changreungcheon stream and Jingwan Neighborhood Park and two linear green axes connecting Jingwan Neighborhood Park and Galhyun Neighborhood Park, but also eco-corridors. A linear water cultivation axis was made by restoring covered or damaged streams, with trails and bicycle roads deployed around the small streams; the blue network of the water system that partially connects forests and the green axis within APT complexes was also established. Urban development considering non-climate factors including wind passage, i.e., white network dealing with deployment plans considering cold wind areas such as the Changreungcheon stream, Mulpure Valley, Pokpodong, and Motjari Valley was taken into account as well.

Figure 2-23 | Green and Blue Network



As a notable eco-project, 4.2km of the 4.7km small streams flowing from Mt. Bukhan and Suoreung Natural Park to the Changreungcheon stream will be restored. The small streams will be developed as natural and ecological environment, and beautiful bridges are planned to be built in various places.

Figure 2-24 | Eco-Friendly Techniques



From the concept of a city where various classes and households live together in harmony, pedestrian-centered streets will be built by minimizing the passage of vehicles including 20m wide streets that pursue the creation of street spaces in everyday life to activate exchanges between local residents. In addition, citizens' plazas, resting places, barbecue parks in total area of 300~600m^2 and various housing types of construction in the low population-density areas were planned.

Figure 2-25 | Variety of Housing Types

The APTs consist of about 240 types with 7 different sizes in the area. Thus, design was done for various types of demand, and selection by the occupants becomes possible. The patio type of APTs is for the flat area and is organically connected with active walking spaces along the streets of the town. Inside such APTs, a garden with a Korean traditional yard concept is installed, contributing to the formation of community between neighbors. The APTs built along the streets offer social spaces and vitality along the street. On the first floor, shopping mall and resident welfare facilities were planned. The terrace APTs offer good sunlight and good views in line with the natural topography, such as a slope. The tower type of APTs is deployed centering on the nearby station area; it plays a landmark role by enhancing urban views and landscape. Detached houses are located around Motjari Valley and Jingwansa Temple, where nature and views are good. By deploying low- and high-rise buildings in harmony, the visual burden is eased through the low-rise main APT buildings' deployment along the streets in everyday life.

Remarkable improvements with the installation of cutting-edge facilities include the automatic collection of waste via underground conveyance ducts, u-information city facilities, new renewable alternative energy facilities, broad area transportation improvement, realization of a well-being city for pedestrians' paradise in a natural environment, educational infrastructure, and eco-energy certification.

Figure 2-26 | Skyline

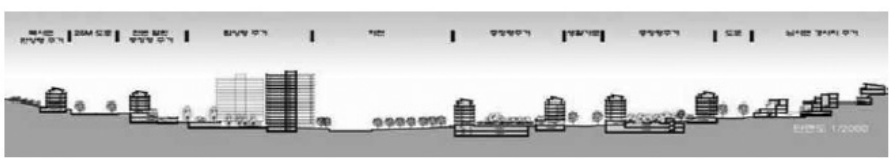


Table 2-25 | Landscape Plan

District 1	
	**· Landscape** - Village where people can see Baekundae (cliff on mountain top), Suoreung Park, and Changreungcheon stream - View with good command of surrounding natural landscape secured - Future-oriented image created through high-rise buildings **· Community** - Realization of ideal eco-garden city with rural scenery as backdrop - New patio type of dwellings that adopted the European street block structure - One-step lifestyle that combines convenience facilities and dwellings **· Natural environment** - Main building deployment and skyline that fully consider the natural view - Preparation of various natural experience arenas linked with green area axis and parks
District 2	
	**· Landscape** - Complex planning harmonized with surrounding natural landscape - Planning skyline and open view axis in line with landscape - Landmark planning reflecting the location characteristics of each complex **· Community** - Dynamic space composition centered on streets for living environment - Planning external spaces and community facilities for various meetings - Cluster planning to enhance exchanges between residents **· Natural environment** - Developing abundant green spaces and planning eco-parks - Minimization of natural environment damage and establishment of green area network

District 3-1	
	· Landscape - Deployment of main buildings considering the city and natural flows - Deployment of main buildings connecting sidewalk and inner yard - Point-type main building deployment making up the district landscape · Community - Streets to expand opportunities to meet neighbors - Cultural spaces for sharing colorful history and culture · Natural environment - Water circulation system establishment using rainfall and natural ground - Offering abundant ecosystem experience opportunities linking eco-rivers

4.2 Innovation City

4.2.1 Overview

The innovation city is implemented with a population size of 300,000 in about 50 million m^2 in 10 regions nationwide, except the Daejeon and Chungnam regions where the development of an administrative complex city is carried out based on the provision of Article 18 of the Special Act on Balanced Development and Article 15 of its Enforcement Ordinance regarding the relocation of public agencies to provincial areas.

On May 27, 2005, the Basic Agreement for Public Agencies' Relocation to Provincial Areas stipulating the basic deployment principles and methods by city and province between 12 mayors and governors was signed. On June 24, 2005, the Relocation Plan of Public Agencies to Provincial Areas was deliberated on and decided in the Cabinet Council, and the innovation city selection principles were announced. The main details are as follows:

First, one innovation city should be constructed in each city and province except the Seoul Metropolitan Area and Daejeon and Chungnam, and can be jointly built between cities and provinces.

Second, the location of an innovation city needs to consider efficiency and fairness within the area as a means of supplementation.

Third, the innovation city should have a convenient living environment and good settlement conditions including dwellings, education, medical service, culture, transportation, and communications; at the same time, it needs to promote mutual exchanges between industry, academia, research, and public sectors.

Fourth, the innovation should minimize new development demand using the existing development sites or land under development.

The location selection criteria include the development possibility as an innovation stronghold, appropriateness of urban development, and matters related to local economic activation such as the possibility of mutual growth within the area. According to the valuation criteria for innovation city location, the Innovation City Location Selection Committee by city and province was organized. As a result of the suitable candidate city evaluation and location selection process by the committees, the following innovation cities were selected:

·Jeonbuk (2005.10.28): 16 million m^2 around Iseo-myeon, Wanju-gun, and Manseong-dong, Jeonju-si

·Gyeongnam (2005.10.31): 3.5 million m^2 around Somunpri, Munsan-eup, Jinju-si

·Gwangju/ Jeonnam (2005.11.17): 12.5 million m^2 around Geumcheon-myeon, Sanpo-myeon, and Bonghwang-myeon, Naju-si, Jeonnam

·Daegu (2005.12.1): 440 million m^2 around Shinseo-dong, Dong-gu, Daegu-si

·Ulsan (2005.12.1): 277,000 m^2 around Ujeong-dong, Jung-gu, Ulsan-si

·Gangwon (2005.12.4): 3.5 million m^2 around Bangok-dong, Wonju-si, Gangwon-do

·Gyeongbuk (2005.12.13): 5.6 million m^2 around Nongso-myeon and Nam-myeon, Gimcheon-si

·Jeju (2005.12.13): 610,000 m^2 around Seoho-dong, Seoguipo-si

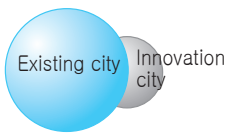
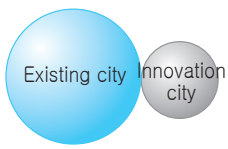
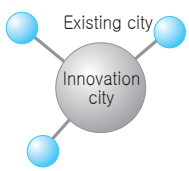
·Busan (2005.12.22): Transferred agencies deployed to the common residential area (Gangseo) and 3 functional guns (reclaimed land in Dongsam-dong, Financial Complex in Munhyeon-dong, Centum City)

·Chungbuk (2005.12.23): 9 million m^2 around Deuksan-myeon, Jincheon-gun, and Maengdong-myeon, Eumseong-gun

4.2.2 Development Conditions and Devising Direction

Regarding the analysis of the innovation city's basic idea, innovation cities can be classified into four types according to the innovation city's spatial location and relative size, shape of planned site, and spatial structure: location type within a parent city, parent city extension type, parent city adjoining type, and new town type. According to such types, the 10 innovation cities that are currently being implemented can be summarized in the table below.

Table 2-26 | Classification of Innovation City Types

Type	Basic Structure	Innovation City Name	Surrounding City
Location type within a parent city		Busan Jeju	Busan Seoguipo
Parent city extension type		Daegu Ulsan	Daegu Ulsan
Parent city adjoining type		Gangwon Jeonbuk Gyeongbuk Gyeongnam	Wonju Jeonju Wanju Gimcheon Jinju
New Town type		Gwangju Jeonnam Chungbuk	Naju Gwangju Jincheon Eumseong

4.2.3 Comparison of Basic Idea Proposals

a. Location Type Within a Parent City (Busan, Jeju)

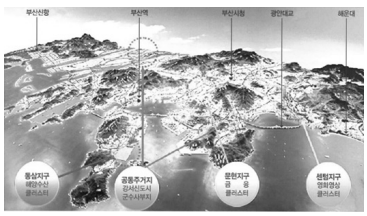
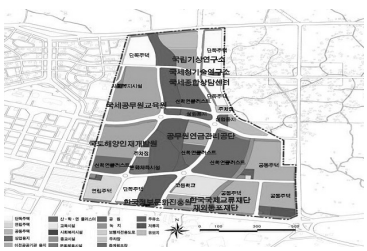
This type seeks to develop innovation facilities having the features of functional activation within the existing cities. It is surrounded by the existing urban spaces of the innovation facilities in terms of spatial configuration. From the innovation function's role perspective, there are some major differences.

In the case of the Busan Innovation City, according to the distribution and deployment of the relocated agencies to three functional groups (Reclaimed land in Dongsam-dong, Financial complex in Munhyeon-dong, Centum city), new central functional roles for urban vitality can be implemented. Ideally, however, other plans should be implemented simultaneously instead of simply leading the changes of the city's entire functions in view of Busan City's size and the innovation functional location size.

In the case of Jeju innovation city, it is located between the old town of Seoguipo City and a newly developed area. From the standpoint of location within the existing city, Jeju

innovation city has aspects similar to Busan innovation city. In comparing the size, however, when the successful construction of Jeju innovation city is completed, it is expected to lead the entire city's functional composition change. Looking into functional features, both Busan and Seoguipo cities have international exchange functions maximizing their geographic locations as an oceanic city.

Table 2-27 | Innovation City Type 1-Location Type within a Parent City

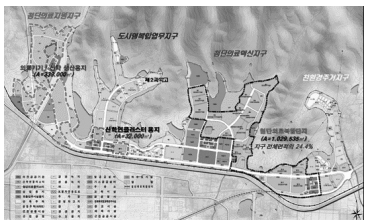
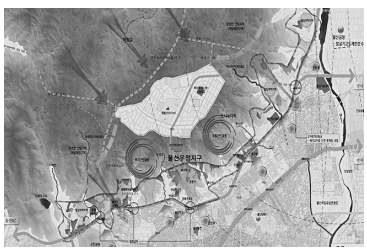
Basic Idea (Proposal)	Basic Direction
 〈Busan Innovation City〉	· Developing an industrial cluster by function according to Busan City's long-term vision · Formation of innovation support environment for linkage between the industry, academia, and research center · Estimation of the required sites and establishment of rational deployment means by relocated agency · Construction of futuristic city having win-win growth environment with the existing city
 〈Jeju Innovation City〉	· Concentration of relocated agencies, key duty functions, and business-supported functions in an innovation city · Idea of developing a tourist shopping (luxury products) street having the characteristics of and accessibility to Jeju · Devising a unified city structure between the Seoguipo new town and the innovation city · Searching for means to link the existing public facilities of Seoguipo new/old towns

b. Parent City Extension Type (Daegu, Ulsan)

This type is a concept that expands functions using the existing scheduled housing site development areas and is developed in the linear type in the suburban area of the adjoining existing city. Consequently, the part in contact with the existing city is developed in long linear form; as such, the structure can maintain close relations with the existing city. Because of all this, the city's spatial structure has a function group distribution structure in a linear type, and the organic systematization of such linear functional structure, as well as securing a linkage with the parent city become the core issue of spatial composition.

Moreover, two cities have a parent city that is a broad city; thus, they are identified as carrying out the innovation support type of functions having differentiation from the existing cities rather than an independent new town.

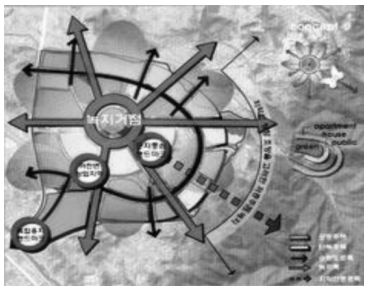
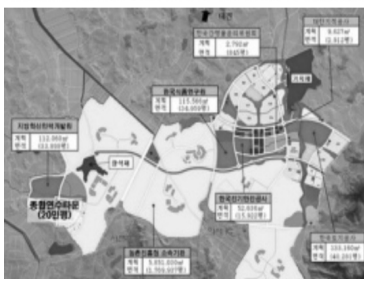
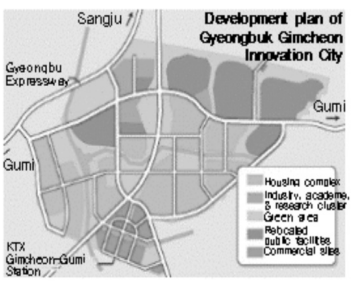
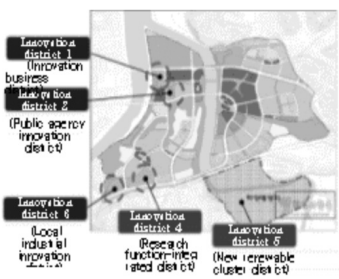
Table 2-28 | Innovation City Type 2-Parent City Extension Type

Basic Idea (Proposal)	Basic Direction
 〈Daegu Innovation City〉	· Main central commercial district planning in the compound district · The central commercial zone of the innovation district is planned to develop community spaces of the innovation city. · Transit transportation control within the district through separation with adequate interval between the main principal roads and supplementary principal roads
 〈Ulsan Innovation City〉	· Promote continuous and stable housing supply to meet the housing demand in the Ulsan zone · Construction of eco-energy and eco-city · Realization of cultural compound city that ensures harmony between nature and people

c. Parent City Adjoining Type (Gangwon, Jeonbuk, Gyeongbuk, Gyeongnam)

This type is similar to the parent city extension type in terms of the entire framework but different when it comes to the connection type with the existing city, shape of the site, and parent city's size. In other words, the site's shape resembles the square shape, and the existing city and town are located at a certain distance, or there is a short part in contact. Consequently, the characteristics of the relevant innovation include a relatively greater independence from the part in contact and the unique spatial structure. Since the parent city is a medium-sized city (Wonju, Jeonju, Gimcheon, Jinju) with a population size of 300,000~600,000, the size is not comparable to that of a metropolitan city. For this reason, innovation cities can have an environment, through which leading innovation functions can be implemented sufficiently.

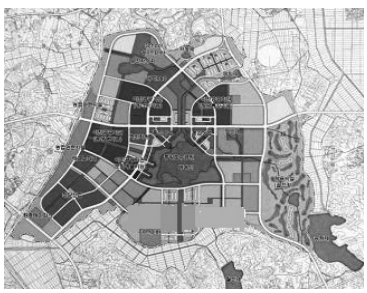
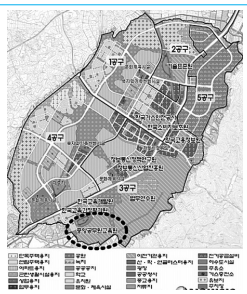
Table 2-29 | Innovation City Type 3-Parent City Adjoining Type

Basic Idea (Proposal)	Basic Direction
 〈Gangwon Innovation City〉	· Diffusion of innovation creation through industry, academia, and research linkage deployment and development of pleasant residential environment conducive for living · Developing excellent settlement conditions including education, culture, and parks · Developing an innovation city using topography · Linkage with innovation central zone, R&D, and commercial functions centered on the relocated public agencies
 〈Jeonbuk Innovation City〉	· Formation of innovation strongholds and consolidation of centralism · Location environment suitable for research · Source of agricultural bio cluster · Preserving the natural topography and eco-environment · Network consolidation
 〈Gyeongbuk Innovation City〉	· Devising the spatial structure to maximize synergy effects through organic linkage between the relocated public agencies · Devising the eco-environmental urban framework in line with the surrounding nature · Establishment of eco-transportation system centered on public and green transportation · Devising a "near-the-station" area centered on Gimcheon Station of the Gyeongbu Express Railway
 〈Gyeongnam Innovation District〉	· Linking the innovation city and Jinju city center · Establishment of U-shaped and inner beltway system for linkage between central commercial, innovation district and residential areas · Consisting of four everyday life zones including schools, amenities, parks, and community centers · By developing a central green area by theme in the outskirts, maintain continuity with the surrounding areas.

d. New Town Type (Gwangju, Jeonnam, Chungbuk)

In this type, the existing surrounding city size is not huge, and the adjoining large cities are spatially separated; hence the difficulty of setting a clear parent city boundary. For this reason, this type means the innovation city that needs the spatial structure of independent urban functions. Consequently, the size of the site is relatively large, and the ripple effect of innovation functions can function widely. In the case of Chungbuk innovation city, relatively remote distance functions and harmonized functionsneed to be implemented from the existing Chungju, Osong, and Ochang. Meanwhile, in the case of Gwangju and Jeonnam innovation cities, they can be cities requiring relatively leading functional roles.

Table 2-30 | Innovation City Type 4-New Town Type

Basic Idea (Proposal)	Basic Direction
 〈Gwangju/Jeonnam Innovation City〉	· Established to realize the objectives and future image of innovation city construction · Development in line with natural conditions and fengshui spatial philosophy · Harmony of urban factors in the entire system · Setting an eco-spatial structure
 〈Chungbuk Innovation City〉	· Devising cross-shaped urban central axis centered on central commercial axis and cluster function axis · Devising two amenity living zones centered on supplementary access road axis and main building direction axis · Development of a community landscape street centered on education, culture, and public service, establishment of an eco-circulation system integrated with water and green area

5. Enterprise city

5.1 Overview

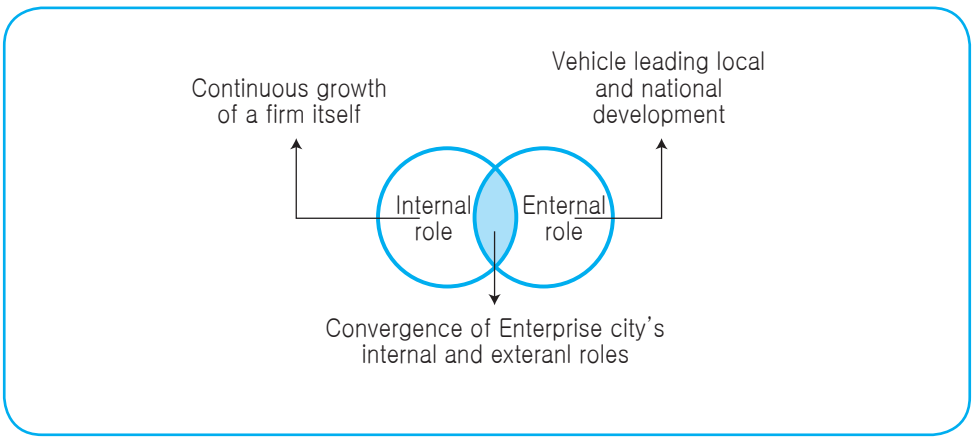
As one of the various settlement types, anenterprise city refers to a community developed for production and economic activities by companies. In other words, in specific areas in the innovation city, specific companies own some areas, and the establishment of various facilities required for corporate activities along with the relevant industrial facilities

including R&D facilities, distribution facilities, and settlement facilities such as residential, educational, cultural, and sports facilities is carried out in a complex manner. The initial stage is that anenterprise city is located in an isolated area centered on natural resources in general. Later, the restriction of location disappears according to the development of transportation and communications, and it tends to be located centered on the city that can use infrastructure. A company is the representative group pursuing profits and is classified into a public agency pursuing public attributes. Therefore, public agencies that provide public services to their employees-such as the post office-must receive approval from the owner of the company concerned when it is located within the Enterprise city. In the case of police, it is operated as a dispatch type, receiving the support of the local government; it is responsible for management and supervision. The company owner builds housing for workers and rents rather than sells homes. Consequently, workers are not allowed to buy land and build homes. In addition, the companies operate convenience facilities such as welfare facilities and supermarkets within a city for the workers' welfare. The enterprise city is used as a means of promoting the bond between labor and management.

In classic economic terms, anenterprise city was compared with a local monopoly. The reason is that a company operates pharmacies and stores along with a newspaper company in a monopolistic manner, and the workers borrow books from the company-owned library and have meals in the restaurants; all the signboards of the street have the same company name as well. Moreover, an Enterprise city is expressed as the economy of Dept. Base. This is because workers purchase all the products produced by the company ranging from cars to TVs using corporate credit cards, and they are in debt all the time.

Based on the need for enterprise cities, the roles played by the enterprise city are classified into an internal role at the corporate dimension and an external role at the local and national dimensional. The internal role maximizes added value by offering enhanced production base and enables the continuous growth of the company along with guaranteeing corporate activities, at the same time guaranteeing the freedom of corporate activities. The external role is to create jobs and generate income in the area and activate the local economy and play the role of stronghold of the nation by carrying out corporate activities and realizing the balanced development of the nation. Furthermore, the city promotes the location of foreign companies and performs the role of an exchange stronghold with foreign countries (S.J. Ju, 2004a, 16-17; S.J. Ju, 2004b, 7) [Figure 2-27].

Figure 2-27 | Enterprise city's Internal and External Roles



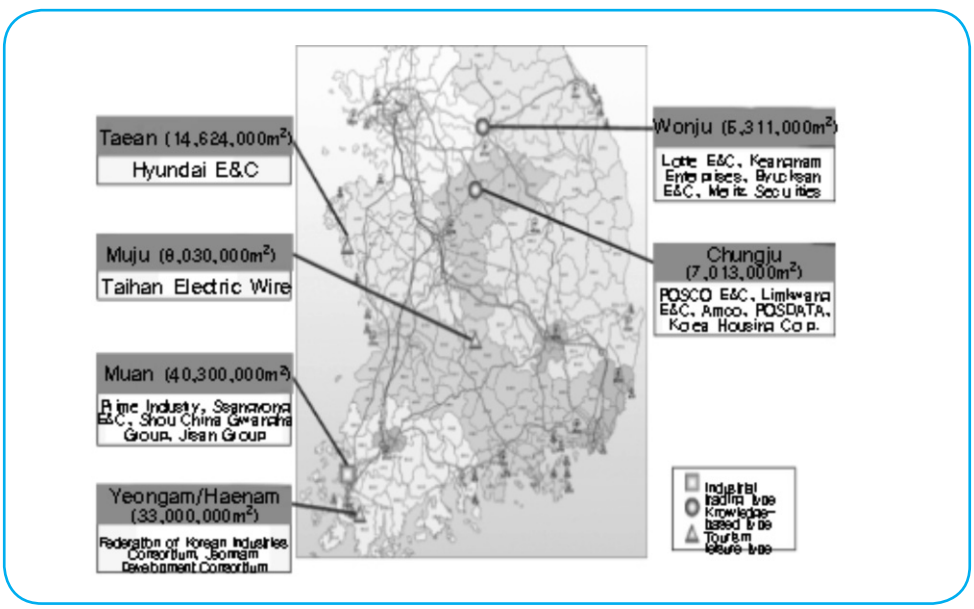
Anenterprise city has been implemented to expand local economic independence and investment in Korea by companies through urban development using private sector capital. In October 2003, the Federation of Korean Industries proposed an enterprise city development to promote firms' investments and to create jobs in the government. The government devised the Special Act on Enterprise City Development in June 2004 by promoting the enactment of the special act through the FKI proposal to promote balanced national development through domestic investment and local development. Actually, the act was enacted and proclaimed on December 31, 2004 through consultation and an opinion-convergence process with the relevant agencies, experts, and civic organizations.

Anenterprise city is a city developed mainly by private companies for industrial locations and economic activities. It refers to a city having self-reliant complex functions including homes, education, and medical facilities required for settlement along with the maximization of linkages and efficiency with related industries such as production and R&D by developing a site that the company itself needs. Anenterprise city is classified into the industry exchange type, knowledge-based type, tourism and leisure type, and innovation stronghold type. Furthermore, the implementer makes use of some of the enterprise city-developed land to prevent a concentration of real estate development rather than industrial investment.

The government implemented a pilot project to enhance the local government's interest and induce companies' active investment by realizing the enterprise city development project. Toward this end, the pilot project plan was announced in January 2005; as a result of accepting the pilot project in April, the following 8 cities applied for enterprise cities: knowledge industry trading type-Muan; Knowledge-based type-Chungju, Wonju; Tourism and leisure type-Taean, Yeongam/Haenam, Sacheon, Muju, and Hadong/Gwangyang. Note, however, that 6 pilot projects except Hadong/Gwangyang along with Sacheon were selected in August 2005 through onsite investigation, evaluation, and deliberation of the Enterprise City Committee.

The project was smoothly implemented, including the establishment or approval of the company in charge of the enterprise city led by the participating companies and local governments by project. As of July 2007, the development plans were approved for the Taean, Wonju, and Chungju projects among the 6 pilot projects, and the procedure for approving the development plan of the Muan/Muju project is being implemented. According to the development plan establishment, the groundbreaking ceremony of Chungju Enterprise City was held on July 1, 2008; other pilot cities' implementation plans are currently under way.The enterprise city is expected to activate private corporate investment,create local jobs, and balance national development. Most pilot cities are scheduled to commence by 2009, with the project periods of the 6 enterprise cities including Wonju and Chungju set before and after 2012.

Figure 2-28 | Enterprise City Pilot Project Location



Source: Ministry of Construction and Transportation, National Territory Balanced Development HQ

5.2 Types and Characteristics of Enterprise City

The Special Act on Enterprise City Development enacted in December 2004 classifies enterprise cities into 4 types. First is the industrial trading type, which refers to anenterprise city centered on manufacturing and trading. A city is developed in an undeveloped site through large-scale factories, or large-scale corporations are located in the existing city. Second is the knowledge-based type, an R&D-centered enterprise city where many schools, research centers, and venture businesses are integrated. Examples include the US's Silicon Valley or the British's Cambridge-type enterprise city. Third is

the tourism and leisure type. Anenterprise city centered on tourism, leisure, and culture pertains to a city formed through tourism and leisure industries on a site with a good landscape. Examples include large-scale tourist attractions such as the US's Disneyland or Walt Disney World. Lastly, the innovation stronghold-type enterprise city refers to anenterprise city built to create innovation through integration, including the relocation of government or public agencies'

As the home of enterprise cities, the US does not classify the enterprise city type into knowledge-based, industrial trading, or tourism and leisure types but classifies them according to who designed the city, i.e., whether urban planners or architects or both parties designed the city, whether external experts or the enterprise city's workers designed the city.

There are differences between enterprise cities and new towns. New cities can be Ilsan and Bundang, built as a means to cope with the housing shortage and real estate speculation in Seoul at the end of the 1980s and early 1990s; these cities are developed by the government, and private companies merely participated in the construction stage. For these cities, Korea Land Corporation was in charge of land purchase and appropriation and housing site development; private companies were in charge of construction (dwelling-centered cities) only. Meanwhile, enterprise cities are developed mainly by private companies, as differentiated from the existing industrial complexes where the public sector is emphasized.

Gumi, Changwon, and Ansan are typical examples of cities the government developed as industrial complexes and private companies subsequently build factories there. Meanwhile, Pohang and Ulsan are cities where the residential function followed after companies built factories there; they have features similar to enterprise cities, albeit superficially. Note, however, that the companies do not own the regions in Pohang and Ulsan; they exist together with municipal governments, so these cannot be called enterprise cities. As to the advantages of anenterprise city, using the private sector's creativity and vitality in a place where companies are needed, the city is developed to have self-reliant complex functions such as housing, medical service, education, and culture to save on investment costs and shorten the development period compared to industrial complexes. Moreover, industrial locations and corporate investment simultaneously occur, with huge economic ripple effects.

Table 2-31 | Comparison of Enterprise City and Industrial Complexes

Category	Enterprise City	Existing Industrial Complex
Location selection	Private companies	Public corporations (private companies participate in a limited manner)
Development subject	Private companies in principle jointly between private and public companies possible	Public corporations in principle Private companies can develop their own use portion only

Category	Enterprise City	Existing Industrial Complex
Development procedure	Simultaneous execution of complex development and selling Autonomous selling by the project implementer Autonomous selection of occupant type size	Inviting pre-development and post-occupant companies Occupancy business types and sizes are limited.
Provisions of authorization and permission	88 articles of 41 acts	39 articles of 19 acts
Living conditions	Preparation of settlement conditions as a compound city including education, medicine, and culture	Settlement conditions are insufficient due to development centered on production functions.
Tax break	Project implementer: Reduction of income tax and corporate income tax-50% for 3 years, and then 25% for 2 years Occupant company: Reduction of income tax and corporate income tax-100% for 3 years and then 50% for 2 years Local tax: Local governments autonomously decide within the scope of 15 years.	Project implementer: None Occupant companies: Reduction of income tax and corporate income tax-50% for 4 years (agricultural and industrial complex); Reduction of property tax and aggregate land tax-50% for 5 years

A general enterprise city has differentiated features from Korean-version enterprise cities in the following aspects:

First, the owners of anenterprise city are individuals or their families. A company is established to improve productivity and pursue profits; hence the need for promptness in decision making. Consequently, anenterprise city is established by individual businessmen, their families operate the city, and ownership is transferred to the family.

Second, anenterprise city rarely accommodates trade unions. The purpose of a company is to improve productivity and pursue profits; thus, the company does not want to accommodate the trade union. Note, however, that a company makes continuous efforts to develop the labor environment that workers want so that they do not complain about the absence of a trade union.

Third, a company rents rather than sells land within the enterprise city. The homes supplied by a company to the workers are all rental homes. To avoid the criticism of it being an oligopolistic operation, i.e., the company has a monopoly over everything, from the outside, the company allows external merchants to move into the city depending on the situation, again based on land rental type rather than on land sale.

When a public agency lets public facilities such as a post office move within the enterprise city, the public agency should rent the land where the post office is located. A company uses the ownership and management right of the land as the main means of controlling the workers directly/indirectly.

Fourth, although anenterprise city generally does not exceed 3.3 million m^2 in terms of area, it may differ depending on the city's functions. In the case of the US, the home of enterprise city, the enterprise city is called a company town. This is comparable to our enterprise cities since Korea's Special Act on Enterprise City Development sets forth the sizes and types of enterprise cities, and the mandatory use ratio of a company is stipulated. Note, however, that the city's size can differ depending on the city's functions; thus, there is no need to be restricted significantly in terms of area. These features are compared with our case. To build anenterprise city, companies should play a leading role; at present, however, local governments lead enterprise city development. This is because corporate participation is limited under the current legal and institutional conditions.

Since the Special Act on Enterprise City Development heavily emphasizes public attributes, it does not match the corporate principle of pursuing profits. Thus, companies avoid enterprise cities, and local governments are leading the development of enterprise cities instead. Consequently, the relevant law is in place, but its enforcement has problems. In this context, Korea's enterprise cities are actually Korean-version enterprise cities rather than company-led, pure enterprise cities.

Figure 2-29 | Bird's-Eye View of Chungju Enterprise city

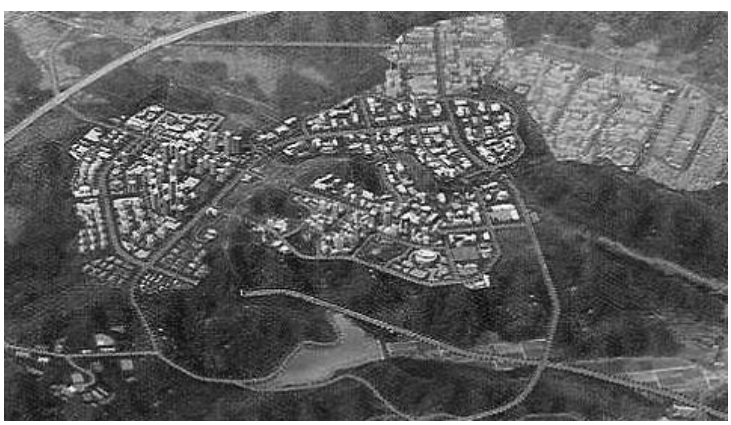


Figure 2-30 | Bird's-Eye View of MuanEnterprise city

Chapter 3

Promotion Method of the Korean New Town Policy

1. Promotion System by Type
2. Legal and Institutional Analysis by Type

Promotion Method of the Korean New Town Policy

1. Promotion System by Type

1.1 New Town Accommodating Industrial Functions

Since the 1960s, the government has been building new towns to achieve various political goals by phase. Until the 1970s, industrial complexes and new towns as their backup cities were built in non-metropolitan regions for purposes of supporting economic growth. The "Special Act on Industrial Sites" was a major legal and institutional promotion system to accommodate the industrial function. As an institutional improvement system for the advancement of industrial functions to achieve economic growth, the "Special Act on Industrial Sites" principally came into effect.

An enhancement act of industrial base development was established on December 24th, 1973 in order to suggest development strategies and processes for effective development of large-scale industrial bases, as well as to establish the Korea Industrial Base Development Corporation which was in charge of projects.

Establishment of a special act for locating and developing industrial sites made financial support of developers and newly occupied firms easier than other development types such as manufacturing site development projects and land adjustment projects. Also, it provided opportunities to implement public development within a short period of time for maximized effects of the projects. Finally, the special act made possible reinvestment in urban infrastructure by sharing development profits.

However, there were also some problems in that special act. First, it distorted spatial structure in urban areas because it could not support the development of plans in conformity with existing urban structures. Also, the special act limited participation in industrial base development by private development companies because most projects were implemented by the public sectors. Finally, the concept and goals of this special

act was in conflict with the purpose of planned development and caused great confusion among urban planning acts.

To solve this problem, it is necessary to encourage private development and active public participation, and industrial development plans in line with urban comprehensive plans should be required.

According to the special act, financial resources should be made by developers, but projects secured their budgets by using government subsidies or advance payments. Since the laws and systems related to industrial sites at the time were deemed complicated, it failed to facilitate the successful supply of industrial sites and hindered the rational utilization and balanced development of the land. As such, some parts of the "Industrial Base Development Promotion Act," "Regional Industry Development Act," and "Act on the Promotion of Income Source Development for Farming and Fishing Villages" were integrated and revised; this led to the enactment and promulgation of the "Industrial Sites and Development Act" on January 13, 1990.

Pursuant to the "Act on Special Cases Concerning the Simplification of Authorization and Permission Procedures for Industrial Complexes," various authorization and permission procedures required by a large number of development-related laws were omitted. Therefore, it functioned as a systematic foundation with which to shorten the development period, at the same time efficiently promoting development projects.

Table 3-1 | The Main Contents of Industrial Complexes Development

Classification	Key Contents
Purpose	To develop industrial complexes
Entities	Principals: State, local governments, Industrial Complex Development Corp.
	Exceptions: To implement an industrial complex development project efficiently, the Ministry of Land, Transportation, and Maritime Affairs can have parts of the project implemented by other persons
	Consignment: The project developer can consign to the Ministry of Land, Transportation, and Maritime Affairs or a public enterprise the operations related to the construction of industrial complex support facilities and purchase of public water surface among the operations of an industrial complex development project
Use	Industrial site, industrial port and port facilities, water supply facilities, road · railway · track · canal and reservoir facilities, and directly related distribution operation facilities, electricity, etc., supply facilities, final sewage treatment facilities, construction of public buildings, and establishment of housing sites
Land Acquisition	Whole purchase method and public water surface purchase in principle-Exception Replotting method

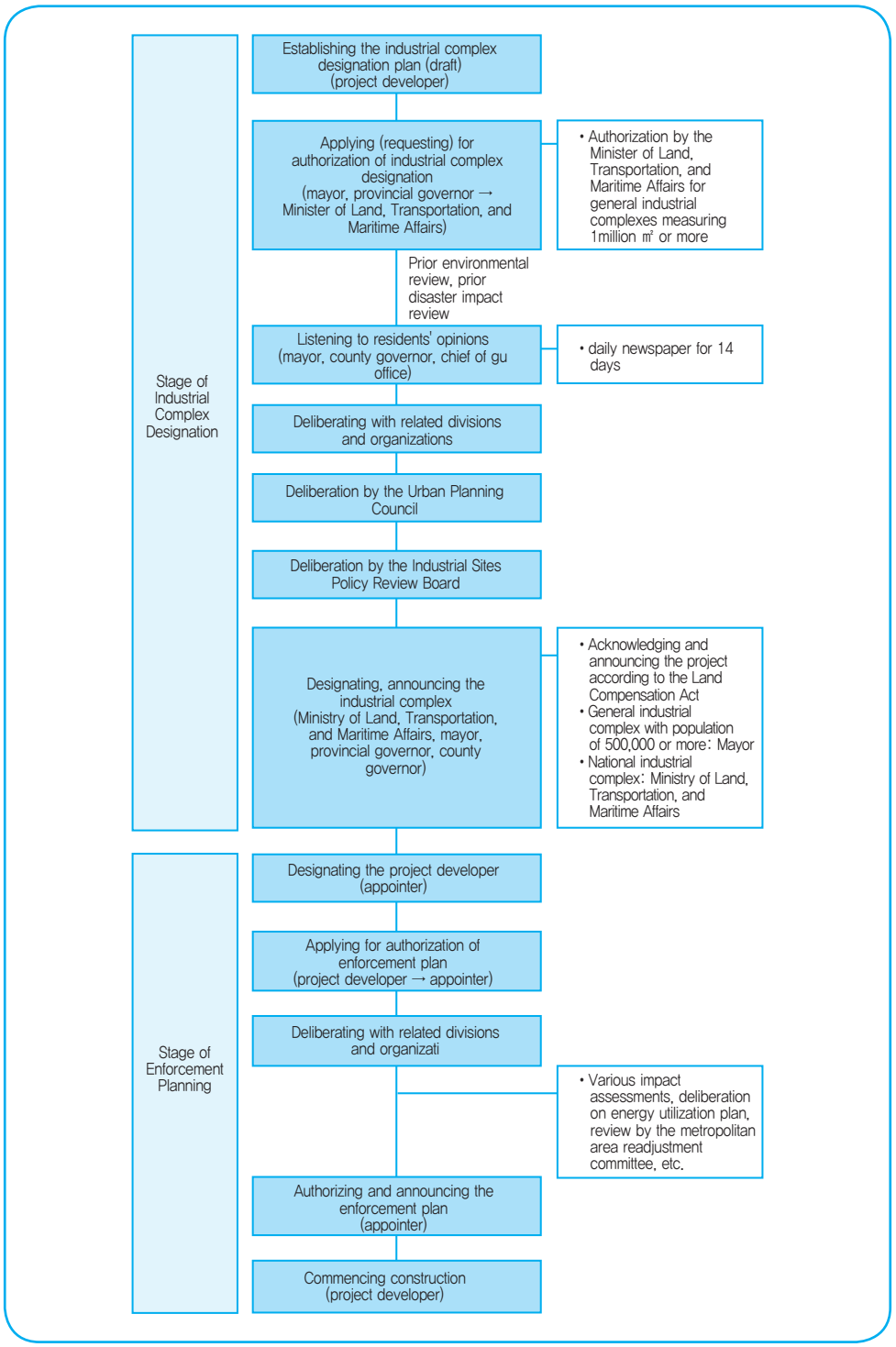
Classification	Key Contents
Land Supply	Transfer to the manager, free reversion of public facilities and land, etc. (note, however, that sites scheduled for the construction of public structures such as government office among existing public facilities are excluded)
Cost Sharing	To be shouldered by the project developer in principle: government subsidies, advance payments, user charge and causer charge, beneficiary charge

The Banwol district plan-the industrial development project which 'an enhancement act of industrial base development' was first applied-was approved and announced on September 21, 1976 considering good farmland loss or feasibility of transfer of factories located in Seoul. The goals of new industrial city development in Banwol district were to disperse factories and their workers, to absorb some migrants to Seoul into the district, and to build a self-sufficient city as a strategic base of West Coastal development in Korea and serve as a model of future new city development.

To realize these goals, the Banwol district plan was implemented by the Korea Industrial Base Development Corporation through collaboration among seven government departments. In order to provide accommodations for workers and encourage population dispersion from Seoul to the district, both industrial base development and new town development were implemented at the same time. The original goal of the district plan was to accommodate 200,000 people by 1986. However, the plan was amended in 1985 in order to increase the target population up to 300,000 and build a middle-scale city by 2001.

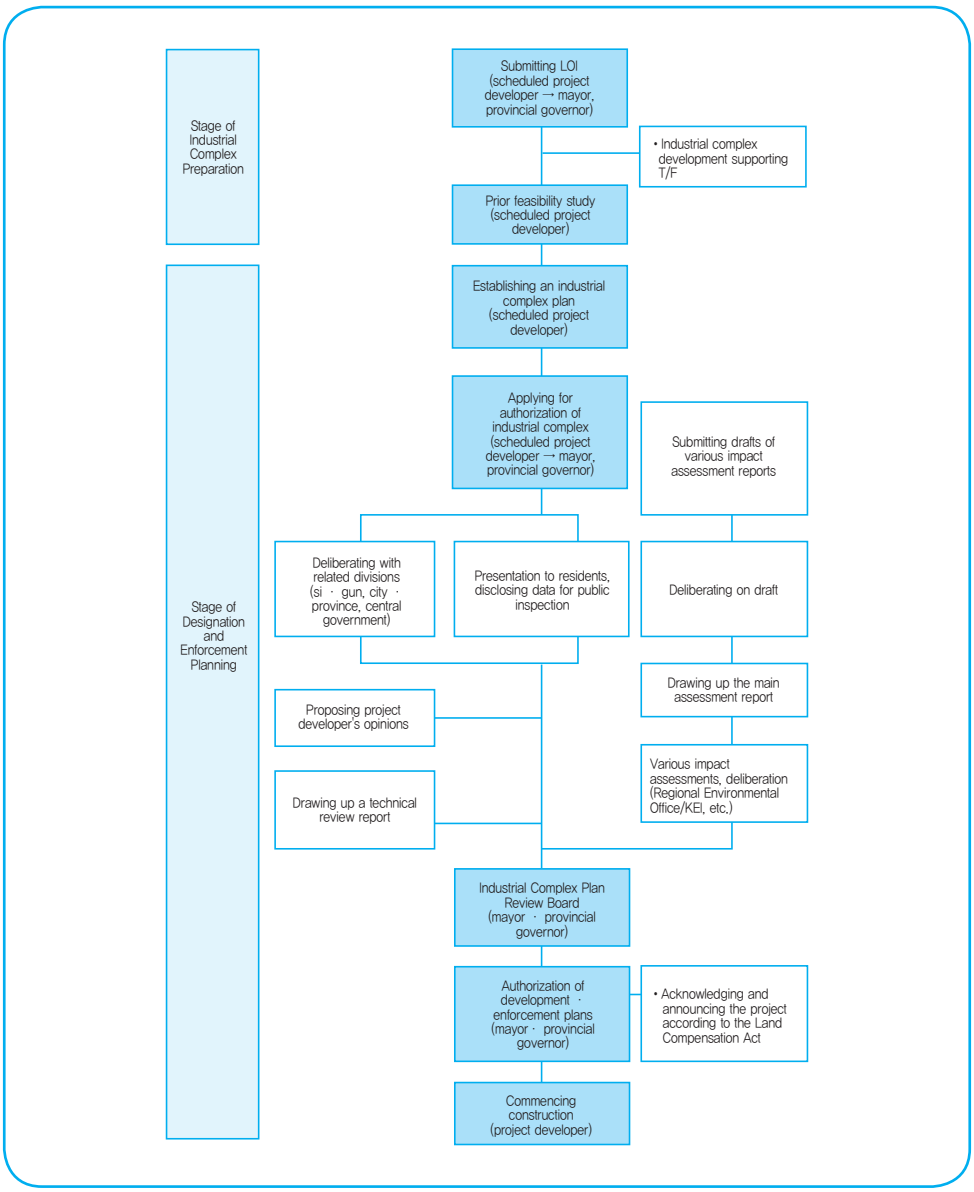
An industrial complex is designated pursuant to Article 6 of the "Industrial Sites and Development Act," and the industrial complex development project was implemented following authorization of the enforcement plan pursuant to Article 17 of the same Act.

Figure 3-1 | Promotion Procedures of the Industrial Complex Development Project (according to the Industrial Sites and Development Act)



A letter of intent is submitted pursuant to Article 7 of the "Act on Special Cases Concerning the Simplification of Authorization and Permission Procedures for Industrial Complexes." Afterward, following a prior feasibility study, the industrial complex development project is implemented by obtaining authorization of the industrial complex development plan pursuant to Article 15 of the same Act.

Figure 3-2 | Promotion Procedures of the Industrial Complex Development Project (according to the Act on Special Cases Concerning the Simplification of Authorization and Permission Procedures for Industrial Complexes)



1.2 New Town with Residential Function

With land price and housing price rising sharply due to overheated speculation in real estate, apartment housing and housing site development basic plans were established in August 1980 as a solution to social issues caused by the residential instability of the low-income urban dwellers and the homeless population. In addition, as a means of effectively promoting new town development, the "Housing Site Development Promotion Act" was enacted.

The enactment of the "Housing Site Development Promotion Act" has wielded significant impact on urban management and development types since the 1980s. Aimed at effectively supplying the necessary housing sites and achieving the quantitative goal of housing supply in a short period of time, the Act is an institutional framework with which to promote land development projects effectively including land purchase or expropriation. To date, 5 new towns have been developed in the metropolitan areas including Bundang.

Consisting of 34 articles and supplementary provisions, the Act-with the exception of the purpose, i.e., aimed at providing a mass supply of housing sites-shares numerous similarities with the Industrial Base Promotion Act in terms of development methods and characteristics. In addition to being a legal system to support public development comprehensively, both Acts prescribe fictitious authorizations and permissions and consequently ensure the efficient promotion of housing site development projects.

In addition, although the Housing Site Development Act divides project entities into the state, local government, Housing Corporation, and Land Corporation, the two are also the same in terms of the government-led utilization of public corporations. Moreover, the procedures for permission, regulation, consent, and authorization set forth by 18 laws including the Urban Planning Act, the Land Readjustment Project Act, the Housing Construction Promotion Act, the National Land Utilization and Management Act, the Farmland Expansion and Development Promotion Act, and the Industrial Base Development Promotion Act can be done away with through a simplified process of deliberation with related organizations. From this perspective, it is-in fact-not different from the Industrial Base Development Promotion Act.

Table 3-2 | The Main Contents of Housing Site Development Promotion Act

Classification	Key Contents
Purpose	To acquire, develop, and supply housing sites
Entities	The state, local government, or LH designated by the Ministry of Land, Transportation, and Maritime Affairs
Target Area	District scheduled for housing site development (zones designated from among urban planning areas and surrounding regions for collective housing site development pursuant to housing site supply plans)

Classification	Key Contents
Use	Housing site (sites for housing construction and public facilities)
Project Scale	No explicit ground rules
Land Acquisition	Whole purchase method or exceptional replotting method

The new city development projects in Korea have been carried out by the national government, but the Korea Land and Housing Corporation (LH) has played a major role in developing new cities. After completing the projects, the LH entrusted local government with the new city management. These approaches to new city development, however, have caused a lot of problems in designating separate developers based on specific development sites within the new city.

The development methods of new cities in Korea can be divided into public development and private development according to developers. When considering land expropriation types, there are whole land purchase and partial land purchase methods for the new city development. According to whether a new city is developed gradually or comprehensively, the new city development methods can be categorized into two-phased and overall development.

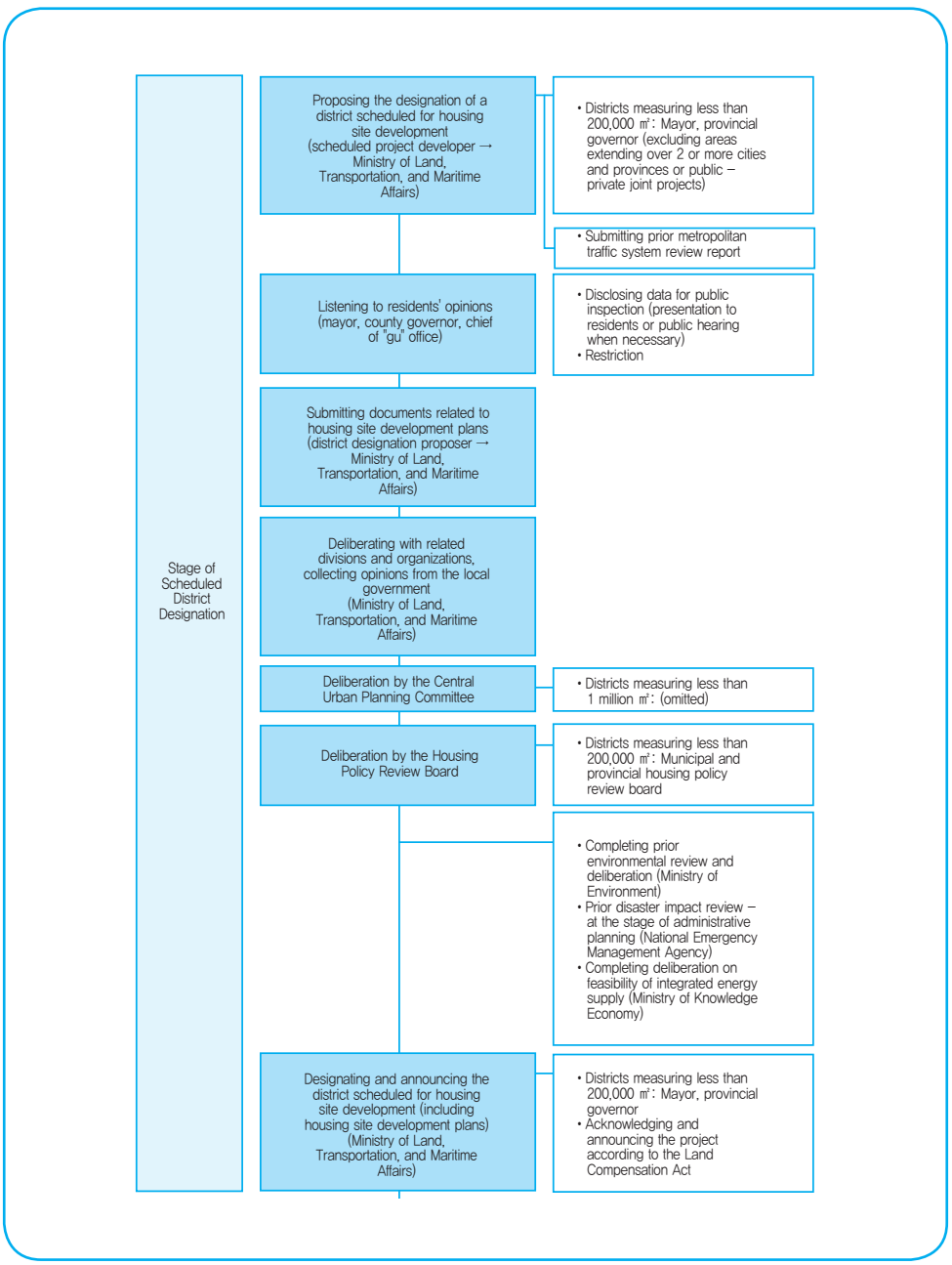
It means that most new city development projects were initially developed by the public sectors, but private development companies actually constructed buildings after acquiring land and sold them to their customers. This is a new city development controlled by private developers. One of the main reasons why new city projects had these characteristics was that most development projects within new city areas were focused on selling residential units like apartments.

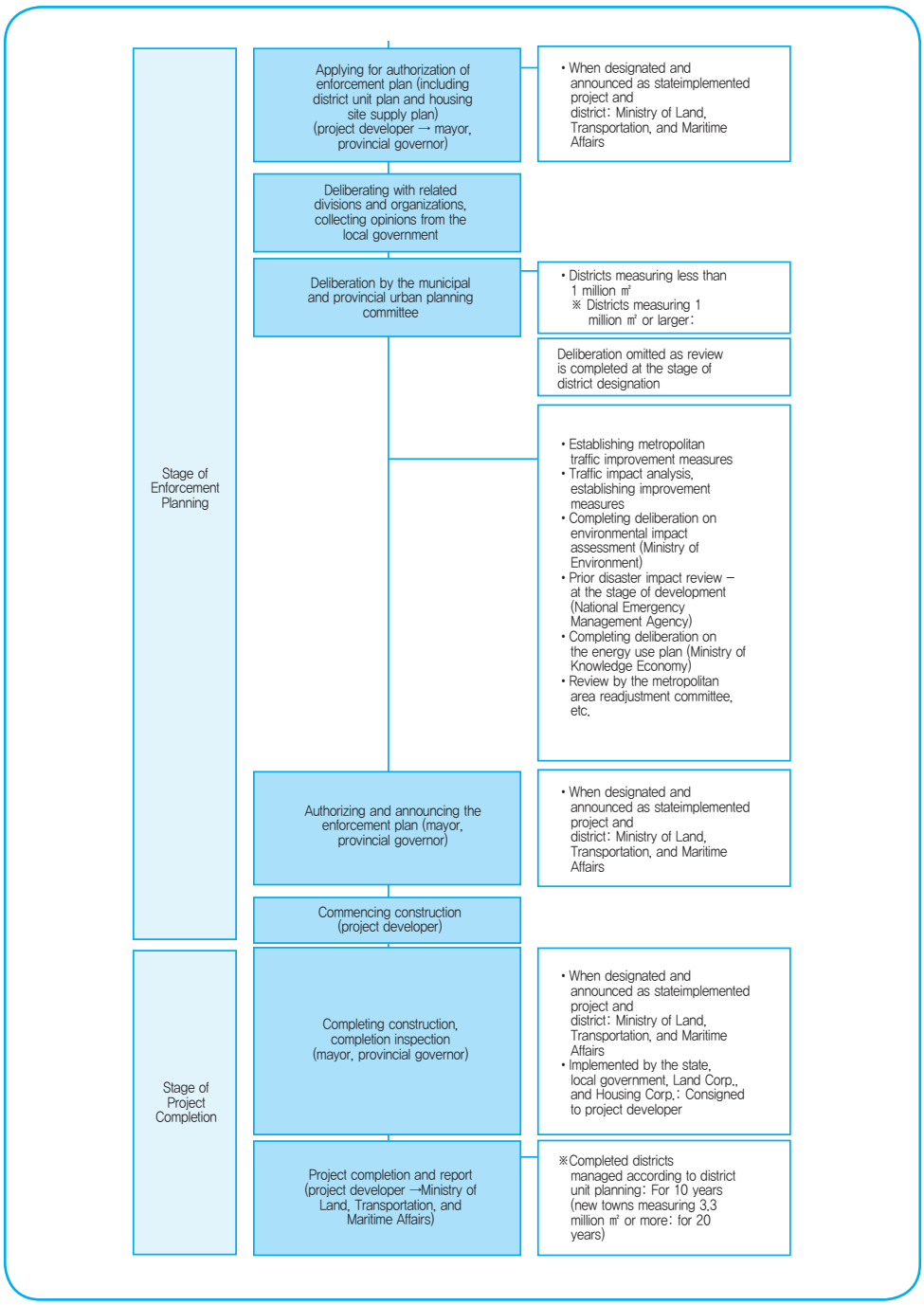
Financial resources for new city development came from advance payments for housing purchases, mortgages on land, payments from land disposal, and national housing funds. In particular, 30% of the funding resources for a new city development were supported by advance payments for housing purchases. Initial financial budgets were made by issuing advance payments for housing purchases and mortgages on land, and after completion, those debts were paid back by selling lots. In case of the Sanbon new city, Korea Housing Corporation utilized its own funding resources instead of advance paymentsfrom land disposal.

Construction costs of a new city development paid by the Korea government were limited only to reclaiming lands and equipping infrastructure. The actual construction costs for developing residential or commercial areas derived from private development companies, but these costs did not include the overall construction costs. Although a lot of construction costs were invested for new city development, budgets from national and local governments were very small, and national housing funds did not serve as the main funding resources in constructing a new city.

Pursuant to Article 3 of the "Housing Site Development Promotion Act," the appointer establishes housing site development plans as per Article 8 of the same Act when designating a district scheduled for housing site development; the project developer implements the project by obtaining authorization for the enforcement plan in accordance with Article 9 of the same Act.

Figure 3-3 | Promotion Procedures of the Housing Development Project




Stage of Enforcement Planning
Applying for authorization of enforcement plan (including district unit plan and housing site supply plan) (project developer → mayor, provincial governor)
• When designated and announced as stateimplemented project and district: Ministry of Land, Transportation, and Maritime Affairs
Deliberating with related divisions and organizations, collecting opinions from the local government
Deliberation by the municipal and provincial urban planning committee
• Districts measuring less than 1 million ㎡
※ Districts measuring 1 million ㎡ or larger:
Deliberation omitted as review is completed at the stage of district designation
• Establishing metropolitan traffic improvement measures
• Traffic impact analysis, establishing improvement measures
• Completing deliberation on environmental impact assessment (Ministry of Environment)
• Prior disaster impact review – at the stage of development (National Emergency Management Agency)
• Completing deliberation on the energy use plan (Ministry of Knowledge Economy)
• Review by the metropolitan area readjustment committee, etc.
Authorizing and announcing the enforcement plan (mayor, provincial governor)
• When designated and announced as stateimplemented project and district: Ministry of Land, Transportation, and Maritime Affairs
Commencing construction (project developer)
Stage of Project Completion
Completing construction, completion inspection (mayor, provincial governor)
• When designated and announced as stateimplemented project and district: Ministry of Land, Transportation, and Maritime Affairs
• Implemented by the state, local government, Land Corp., and Housing Corp.: Consigned to project developer
Project completion and report (project developer →Ministry of Land, Transportation, and Maritime Affairs)
※Completed districts managed according to district unit planning: For 10 years (new towns measuring 3.3 million ㎡ or more: for 20 years)

1.3 New Town with Complex Functions

1.3.1 Multi-functional Administrative City

In the 1970s, the Korean government developed a new administrative capital development plan to disperse the overcrowded population of the capital area into other areas and to encourage more balanced national development, but failed to realize the plan because it violated the Korean constitution. Nevertheless, in the 2000s, the national government made a decision to build a new, innovative multi-functional administrative city (Sejong City) for the purpose of strengthening national competitiveness and improving quality of life. Sejong City is now under construction and will be completed by 2030.

Table 3-3 | The Main Contents of Multi-Functional Administrative City

Development Phases	Process
Preparation Phase (~ 2005)	Establishing an act of the Multi-functional Administrative City (05.3) Designating the inner area and a developer (05.5) Developing an action plan for transferring government organizations into Sejong City (05.5)
Planning Phase (~ 2007)	Comprehensive and Development Plans of Sejong City (05.6~06.12) Implementation Plan (05.9~07.3), Land Purchase(05.12) Multi-functional Administrative City Construction Agency (06.1)
Construction Phase (~ 2011)	Land reclamation and construction of government office buildings
After the year 2012	Phased transfer of administrative agencies and residents moving-in

Sejong City is working in close collaboration with the Multi-functional Administrative City Construction Agency (MACCA), Ministry of Land, Transport and Maritime Affairs (MLTM), Ministry of Public Administration and Security (MOPAS), and developers. Furthermore, for the successful completion of the Sejong City development, public participation and planning professional involvement are highly encouraged to develop the action plan of transferring administrative agencies, the Sejong City comprehensive plan, and the Development Plan.

Table 3-4 | The Subjects of Multi-functional Administrative City

Categories	Process
Planning Promotion Committee	Chairman: Minister of MLTM·Private Chairman
	Committee Members: Vice-minister of MOPAS, Vice-ministers of other related administrative agencies, Chairman of Multi-functional Administrative City Construction Agency etc. (9 members) and 14 private members from various professional fields (appointed committee members)
	Role: Reviewing main policies related to the city construction and development
Advisory Committee	Role: consultation about policy issues reviewed by the planning promotion committee
MACCA	Management of the inner area of Sejong City Establishing the Development Plan Approving the implementation plans Building Permits Infrastructure Plans Handling overall construction and development
MLTM	Designating the inner and outer area of Sejong City Designating developers Establishing the comprehensive plan Setting up initial plans for Sejong City
	Developing policy actions against unplanned development and real estate speculation Policies and measures for supply and demand of construction materials and human resources
MOPAS	Developing plans for transferring administrative agencies Plans for constructing government office buildings in Sejong City Welfare plans for public officers who will move to Sejong City
Developers	The Korea Land and Housing Corporation (LH) was designated as a primary developer of Sejong City
	Role: Land Compensation, Land Reclamation
Related Public Authorities/ Agencies	Coordinating plans, surveys, and evaluation process such as creation of an environment-friendly city and cultural heritage surveys

The Section 51 of the Special Act of the Multi-functional Administrative City imposes a ceiling of 850 billion Korean won (approx. 8 billion US dollar) as the total construction costs. The table below shows the estimated construction costs of Sejong City.

Table 3-5 | Cost Estimates Put the Public Sector

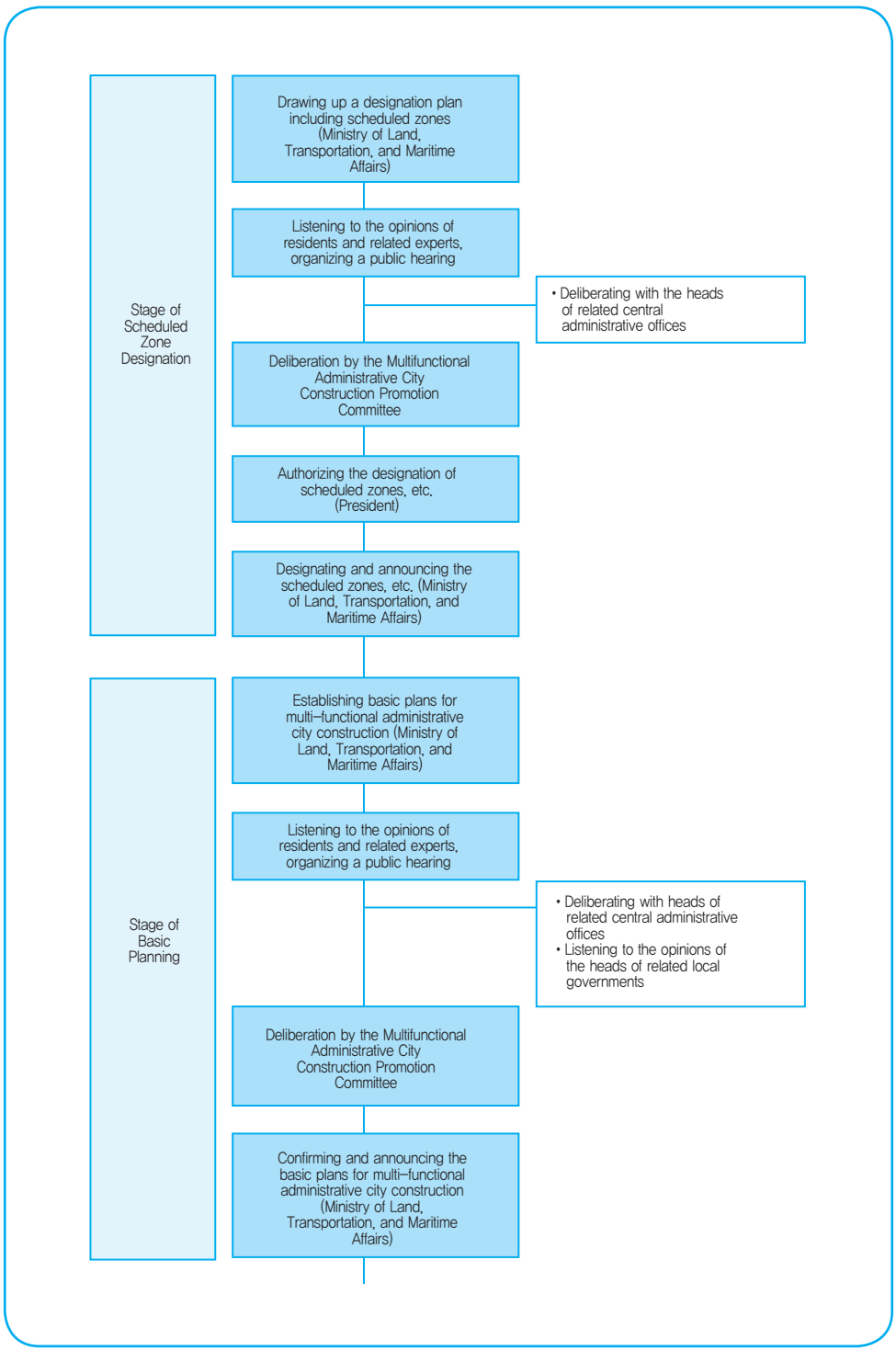
Categories	Costs
Total Construction Costs	8.5
National Government Buildings	2.1
- Construction	1.2
- Land	0.4
- Special Purpose Buildings or Facilities	0.5
Local Government Buildings	3.7
- Public Facilities (Education, Cultural, and Welfare)	1.6
- Land	2.1
Infrastructure for a Wide Area	2.7

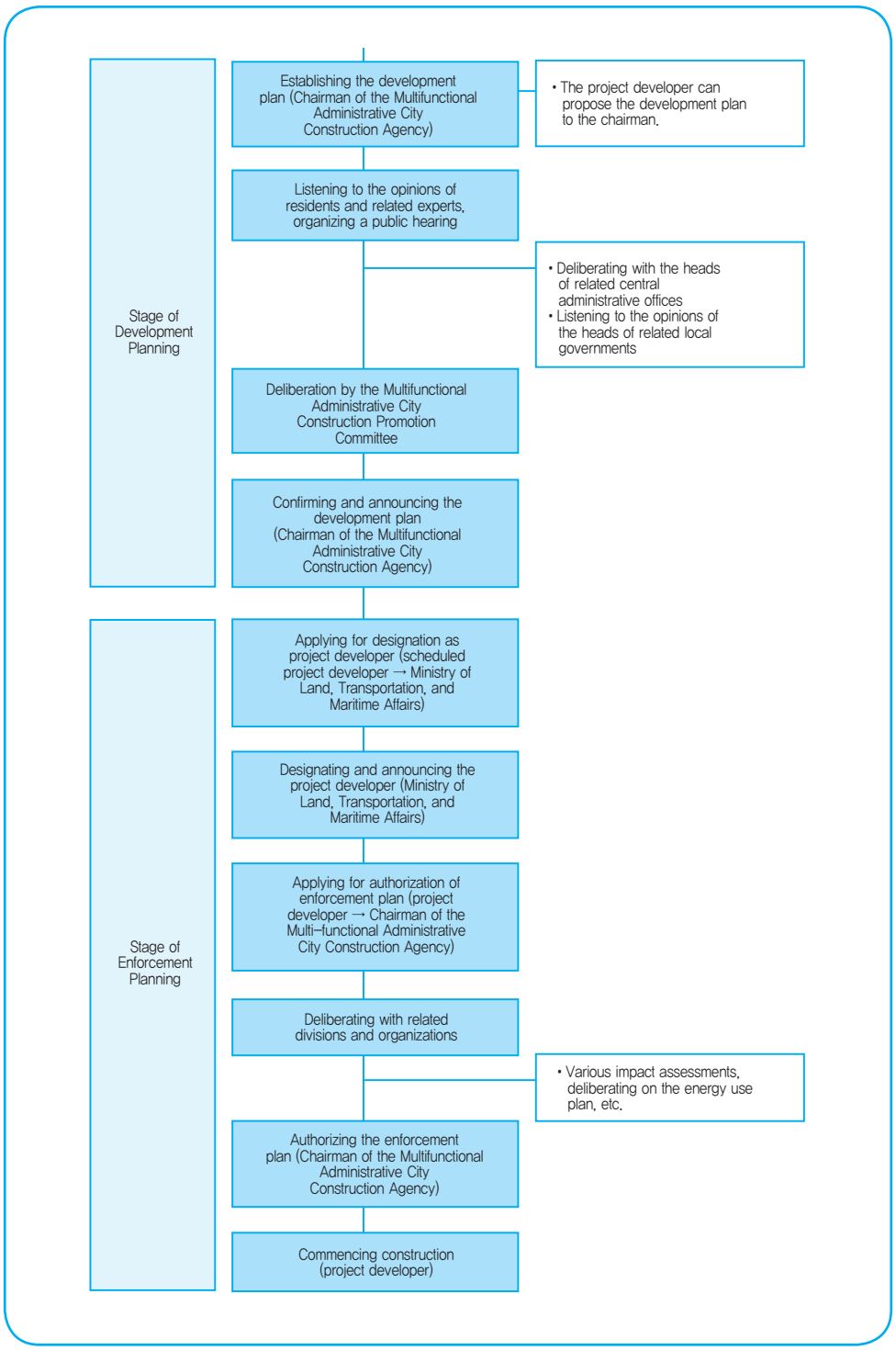
(*) Each cost was based on the 2003 construction cost index. Section 20 of the special act of the Multi-functional Administrative City provides more detailed information on construction costs of Sejong City.

Public investments for Sejong City construction will be made for 30 years. The national government will be in charge of constructing the national government office buildings and wide-area infrastructures. The expenses for local government facilities or public buildings will be shared between the national and local governments according to the features of the public facilities, but before setting up a local government in Sejong City, the national government will pay for those expenses, and the primary developer will be responsible for reclaiming sites including land purchase and infrastructures. Also, for procurement of the construction budgets and effective management of development phases, 'the special accounts for Sejong City construction project' will be set up and operated. In order to build SOC (ex. transportation and environment facilities) and cultural facilities, private investment will be highly encouraged for more creative and innovative facility settings, and development profits will be recaptured by using development impact fees.

The scheduled zones are designated pursuant to Article 11 of the "Special Act on the Construction of Multi-functional Administrative City in Yeongi and Gongju as Follow-up Measures for the New Administrative Capital"; accordingly, basic construction plans are established pursuant to Article 19 of the same Act. The development project is then implemented by obtaining authorizations for the development and enforcement plans pursuant to Articles 20 and 21 of the same Act.

Figure 3-4 | Promotion Procedures of the Multi-functional




Stage of Development Planning
Establishing the development plan (Chairman of the Multifunctional Administrative City Construction Agency)
• The project developer can propose the development plan to the chairman.
Listening to the opinions of residents and related experts, organizing a public hearing
• Deliberating with the heads of related central administrative offices
• Listening to the opinions of the heads of related local governments
Deliberation by the Multifunctional Administrative City Construction Promotion Committee
Confirming and announcing the development plan (Chairman of the Multifunctional Administrative City Construction Agency)
Stage of Enforcement Planning
Applying for designation as project developer (scheduled project developer → Ministry of Land, Transportation, and Maritime Affairs)
Designating and announcing the project developer (Ministry of Land, Transportation, and Maritime Affairs)
Applying for authorization of enforcement plan (project developer → Chairman of the Multi-functional Administrative City Construction Agency)
Deliberating with related divisions and organizations
• Various impact assessments, deliberating on the energy use plan, etc.
Authorizing the enforcement plan (Chairman of the Multifunctional Administrative City Construction Agency)
Commencing construction (project developer)

1.3.2 Enterprise City

The purpose of the enterprise city developed by the Korea government was to attract company investment by using private capital for urban development and to encourage local development by revitalizing the local economy. As of December 2010, there are two 'industrial trade type' enterprise cities in Muan (South Jeonla province) and Chungju (North Chungchung province), one 'knowledge industry type' enterprise city in Wonju (Kangwon province), and four 'tourism and leisure type' enterprise cities in Taean (South Chungchung province), Youngam and Haenam (South Jeonla province), and Muju (South Jeonla province).

The selection criteria for the enterprise cities in Korea were determined based on general evaluation categories (level of contribution to balanced national development, possibility of sustainable development, local identities and characteristics, current urban conditions, project feasibility, and stable land price management) and local features according to the enterprise city development types.

Unlike industrial sites or districts whose functions are concentrated on manufacturing, residential and educational functions are developed in enterprise cities along with manufacturing functions. Also, private developers serve as development subjects in constructing enterprise cities. Finally, both selling and construction take place simultaneously in enterprise cities. The enterprise cities provide the environment so that private companies can play a major role in urban development and encourage the revitalization of local investment by private companies and a more balanced local development.

Table 3-6 | The Subjects of Enterprise City

Subjects	Roles	Responsibilities/ Cooperation System
Private Companies	Managing the overall development	- Rights to establish the enterprise city plans and construct the city - Land Acquisition (if developers obtain 50% of the total area or the development is implemented through collaboration with the public sectors) - Use/disposal of development lands - Procuring financial resources (ex. issue of land redemption bonds, receiving advance payments) - Constructing educational, medical, and cultural facilities for a better living environment - Contributing to local communities and encouraging local economic growth 〈Restrictions for power abuse〉 - Meet the qualification criteria such as financial strength (health) - Direct use of development lands/Reinvesting their development profits into the enterprise city development projects

Subjects	Roles	Responsibilities/ Cooperation System
Local Governments	Supporter and Coordinators (participate in the development as a part of developers)	- Supporting the city development: Exempting taxes or development charges/Permits for use of national land - Constructing infrastructures - Permits and approval/Supporting other related administrative agencies - Improvement plans for regional transportation system/Measures for unplanned development
Minister of MLTM (Minister of Culture, Sports and Tourism if the enterprise city is developed as a "tourism and leisure type" city)	serves as a mediator, supporter, inspector, and negotiator in the development process	A Supporter: - Supporting preliminary preparation such as selection of location - Public/expert consultation - Feasibility study of the enterprise city development - Developing/managing the enterprise city comprehensive plan - Extending the deadline of application forland acquisition/compensation approval decisions A Coordinator: - Designating districts and developers/Approval of development and implementation plans - Constructing public facilities and adjusting plans for free transfer of facilities - Developing regional transportation improvement measures - Approval of land redemption bonds/Advance payments/ a permit for building completion/ completion announcementAn Inspector: - Designation, modification, and cancellation of development areas - Monitoring construction projects in the city - Restriction of disposal of land - Cancellation of designation of construction subjects by real estate speculation/ Setting up replacements

In developing the privately led enterprise city, private developers are responsible for procuring development funds. Developers can choose various kinds of procuring methods of development funds according to the characteristics of developers and their organization.

In the first phase, developers must secure 10% of the city construction costs as an initial financial resource. In the second phase, based on Section 10 of a special act on the enterprise city and Section 4 of its enforcement ordinance, companies that do not meet the qualification criteria as developers can invest their money within the range of 20% of the total construction costs. In the third phase, it is possible to issue land redemption bonds for the purpose of partial payment of purchasing costs (ex. lands) through an agreement with land owners, payment guarantees by financial institutions, and the approval of the Minister of MLTM. In the fourth phase, if developers have already obtained land ownership for 50% of the total land area, procurement of development costs by receiving advance payment can be made by developers according to Section 21 of a special act on the enterprise city and Section 33 of its enforcement ordinance.

Considering the purpose of developing the enterprise city, developers must not carry out construction and civil works. Some development lands can be used by developers directly, but facility management or operation of that land should be conducted by companies that will move to the site. For more flexible financial procurement, developers should find ways for banks or insurance companies to invest in the enterprise city development.

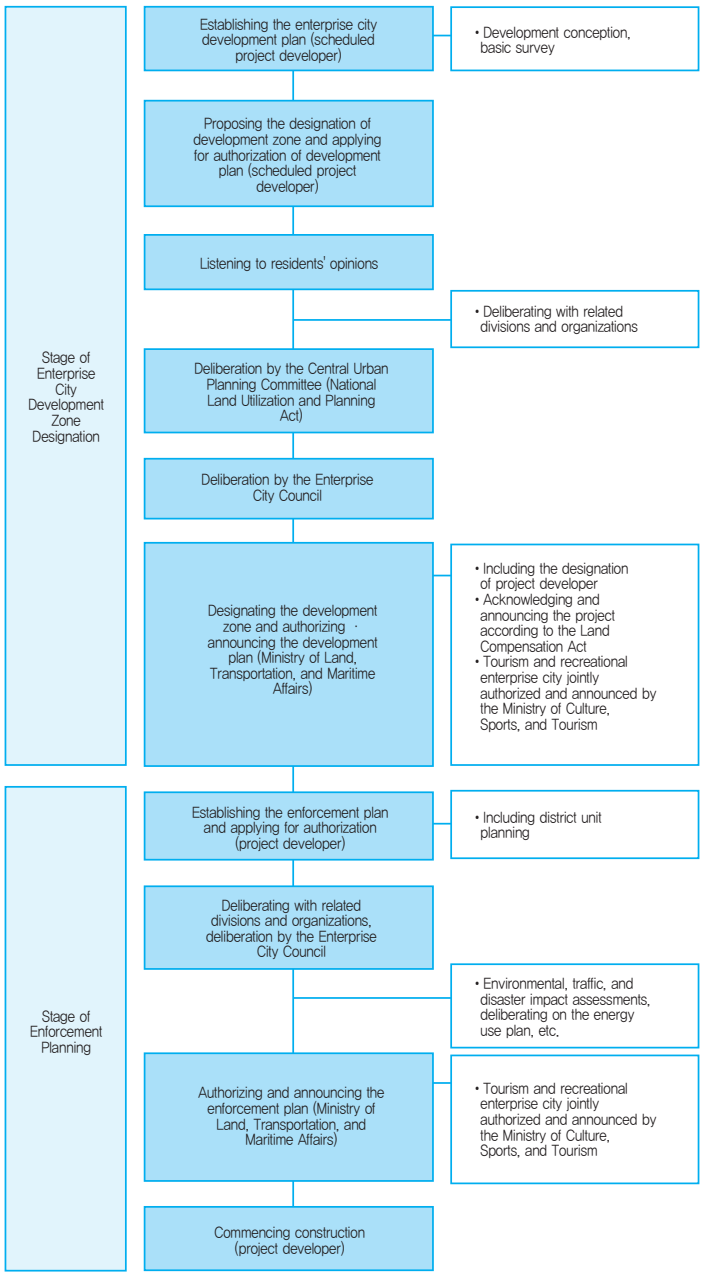
Private investment projects for SOC construction are generally carried out by many private development companies or Special Purpose Corporations(SPCs). By establishing a SPC which consists of multilateral company groups, private companies can reduce their risks. Those SPCs raise their financial resources by issuing ABSs which can be determined by project assets rather than traditional financial methods whose interest rates are determined by a company's credit ratings.

Project financing (PF) can also be considered for financing the enterprise city development. In developing the enterprise city, PF can be applied to construction of hotels, leisure complexes, golf courses, rural residential or apartments. However, PF cannot effectively respond to business fluctuations because it does not provide chances to prepare for economic uncertainty.

Financial resources raised by REITs in the enterprise city development can be retained because they were made by using funds of the whole nation. However, it may be somewhat difficult to use if dividends are not defined in the early development phase. Also, REITs can raise its financial resources by collecting funds from various kinds of investors, but it has some risks such as interest rate changes and the timely collectionof investment principals.

The enterprise city development plan is established pursuant to Article 11 of the "Special Act on the Development of Enterprise Cities," and an enterprise city development zone is designated pursuant to Article 5 of the same Act. Subsequently, the project is implemented after obtaining authorization for the enforcement plan pursuant to Article 11 of the same Act.

Figure 3-5 | Promotion Procedures of the Enterprise City Development Project



1.3.3 Innovation City

The plans for transfer of government office buildings to the innovative cities should be developed and implemented by governors in the receiving province through consultation of mayors, county or borough directors, and heads of the public institution in the sending province. The plans can be developed in 11 different areas-Busan, Daegu, Ulsan, Kwangju, Kangwon Province, North Chungchung, North Kyoungsang, South Kyoungsang, North and South Jeonla, and Jeju Special Self-governing Province. In case of the Kwangju-South Jeonla innovative city, the plan should be developed and implemented through collaboration between the mayor of Kwangju metropolitan city and the governor of South Jeonla by hearing opinions of mayors, county directors, and borough directors in the appropriate areas.

Table 3-7 | The Subjects of Innovation City

Process	Subjects	Date
Selection of innovative city locations	Location selection committee Governors	'06.2
Designating developers	Minister of MLTM (Consultationwithgovernors)	'06.2
A study on a basic framework for the innovative cities Setting up basic concepts of each innovative city	Ministry of MLTM Project managing companies (LH)	'06.2~4 '06.2~7
Proposal on designating the innovative city area (※ Consultation with related government agencies, environment impact analysis, regional transportation system review)	Developer(LH)	'06.6~7
Designating innovative city districts and district developers	Minister of MLTM	'06.9
Request for proposal of innovative city development plans (※ Requesting basic concept plans and development plans at the same time) (※ Developing regional transportation system plans)	Developer(LH)	'07.1
Development plan approval	Minister of MLTM	'07.5~9
Implementation plan approval (※ Traffic analysis, disaster,environment impact analysis)	Developer(LH)	'07.9
Implementation approval	Minister of MLTM	'07.9
Construction start	Developer(LH)	'07.9
Completion of government office building transfer	Minister of MLTM	2012년

Considering development effectiveness and equity, 10 innovative cities were designated through consultation between governmental departments and evaluation results by the innovative city location selection committee. In order to prevent unplanned development and real estate speculation in the designated areas, the government designated the areas and their surrounding areas as land transaction permit areas and restricted building and development permits. Also, the government is carrying out measures against illegal development compensation and deeds and operating a countermeasure center against real estate speculation.

Table 3-8 | The Main Contents of Innovation City

Criteria	Field Categories		Contents
	Sub-categories	Score	
Development possibility as an innovative center	◊ Connectivity to arterial transportation network	(20)	· Access to main transportation systems such as roads, railroads, airports · Proximity to the Multi-functional Administrative City
	◊ Suitability as an innovative center	(20)	· Developing local strategic industries · Collaboration with universities, research institutes, and firms
	◊ Use of infrastructure and public facilities in existing urban areas	(10)	· Availability of urban infrastructure in exiting urban areas · Availability of public facilities
Feasibility	◊ Availability of urban development and economic feasibility	(15)	· Availability of existing industrial sites · Availability of sufficient lands for industrial use · Availability of infrastructure development · Appropriate land price and policy actions against real estate speculation
	◊ Environment-friendly locations	(10)	· Environment-friendly development · Residential development with a lot of amenities
Possibility of sharing growth with other urban areas	◊ Balanced development	(10)	· Possibility of balanced development
	◊ Sharing its benefits	(10)	· Plans for sharing development profits with basic unit municipalities
	◊ Municipality support	(5)	· Plans for supporting basic unit municipalities
Total Score		100	

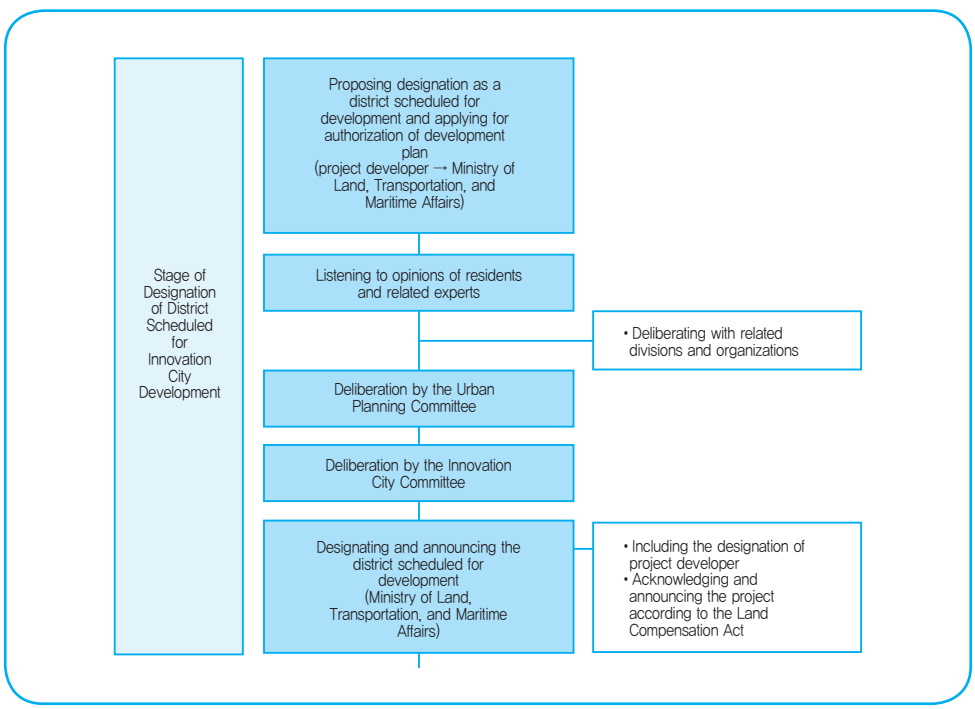
According to the plan of transfer of government office buildings announced on June 2005, government agencies or departments which are scheduled to move to the innovative city should sell their existing properties to purchase lands and construct their new buildings. Whether those government institutions and agencies sell their own properties by 2012 will be a key indicator of the successful development of the 10 innovative cities in Korea.

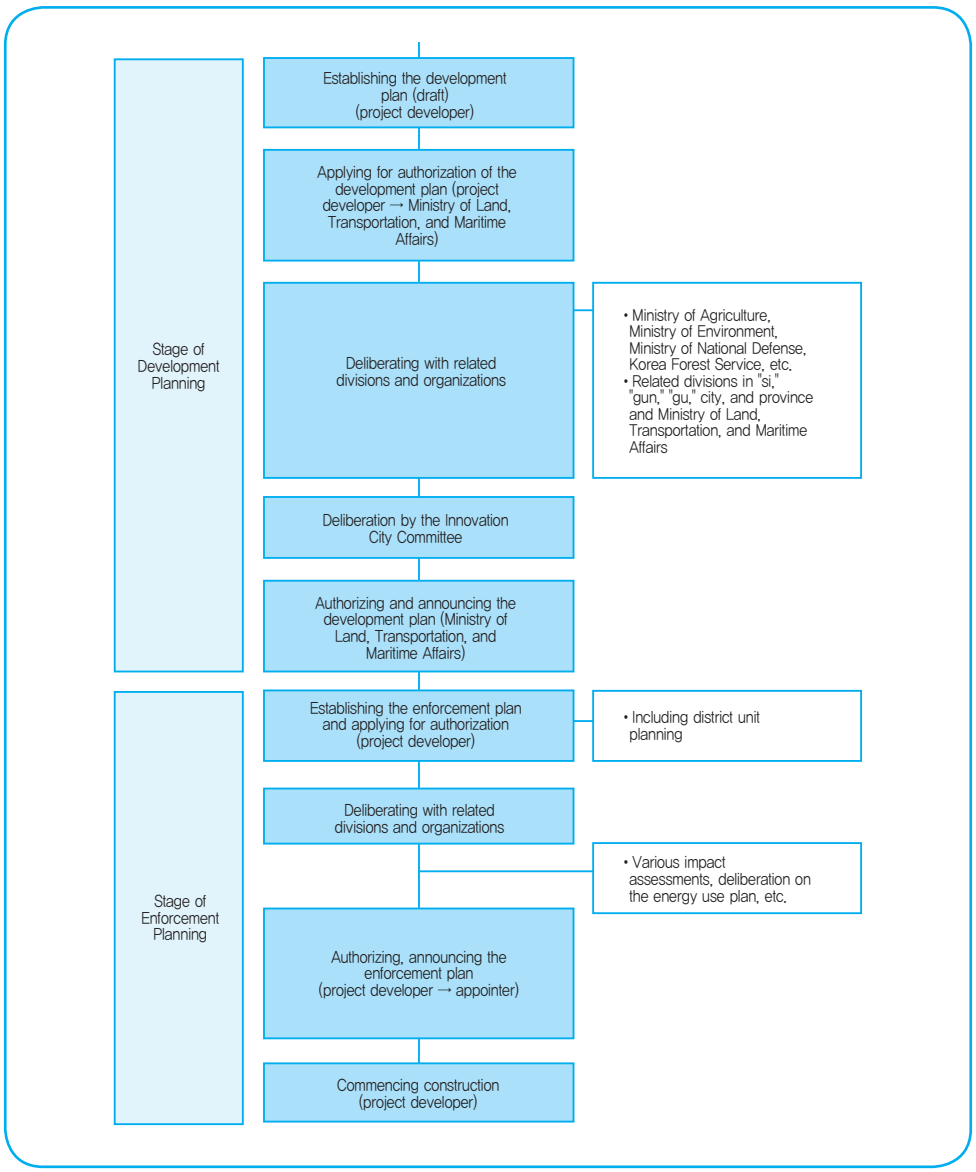
Governors should estimate the total cost for constructing new government office buildings and supporting public officials. Also, local municipalities should estimate categories and costs that they can support for transfer of government institutions and their public officers.

The financial plan should be established through consultation between metropolitan and basic unit municipalities. Metropolitan and basic unit municipalities should reflect the transfer costs on their middle-term budget plan so that the plan can progress without any problems.

A district scheduled for Innovation City development is designated pursuant to Article 6 of the "Special Act on the Construction and Support of Innovation City according to the Transfer of Government Offices to Regional Locations." Subsequently, the Innovation City development project is implemented by obtaining authorizations for the development and enforcement plans pursuant to Articles 11 and 12 of the same Act.

Figure 3-6 | Promotion Procedures of the Innovation City Development Project





2. Legal and Institutional Analysis by Type

2.1 New Town Accommodating Industrial Function

2.1.1 Act on Industrial Sites and Development

Enacted in 1990, the "Industrial Sites and Development Act" aims at the successful supply of industrial sites and rational industrial allocation and the ensuing contribution to the wholesome development of the national economy by achieving balanced development of the territory and continuously promoting industrial development. According to the Act,

an industrial sites policy review board ("review board") can be installed in the Ministry of Land, Transportation, and Maritime Affairs to deliberate on important matters related to the policies of industrial sites; a regional industrial complexes review board can be installed in municipal and provincial governments to provide the Mayor of Seoul and other metropolitan cities and provincial governors with consultation in relation to the designation and development of regional industrial complexes.

The Minister of Land, Transportation, and Maritime Affairs or a mayor · provincial governor can conduct the basic survey necessary in establishing industrial sites development guidelines, industrial sites supply plans, and industrial complexes development plans. In particular, the industrial sites development guidelines provide details related to the planned and systematic supply of industrial sites, designation · development · support of industrial complexes, and environmental preservation including environmental impact assessment. For the establishment of industrial sites policy and successful supply of industrial sites, the basic direction of industrial sites policy, supply forecast by region and industrial complex type, details of industrial sites supply by region and industrial complex type, and details of various forms of support to ensure the successful supply of industrial sites should be specified.

2.1.2 Act on Special Cases Concerning the Simplification of Authorization and Permission Procedures for Industrial Complexes

The "Act on Special Cases Concerning the Simplification of Authorization and Permission Procedures for Industrial Complexes," is the most fundamental authorization and permission system to provide factory sites; demand for industrial sites is increasing as a result of demand by companies that have come back to Korea from the Chinese market. Note, however, that the imbalance in the supply of industrial sites is severe in most of the metropolitan regions and Gyeongsangnam-do and Jeollanam-do regions due to insufficient supply and unavailable sites. Owing to the complicated regulations, it takes an average 2~4 years from industrial complex designation to enforcement plan authorization. From the business perspective, it leads to a production setback because plant transfer is not completed at the right time. From the viewpoint of a local government that is hoping to revitalize its local economy, it also hampers the successful attraction of more factories. Therefore, to supply industrial complexes promptly, the opinions of the local governments and enterprises were collected to draw up regulatory improvement plans. Afterward, to implement the plans, the enactment of the "Act on Special Cases Concerning the Simplification of Authorization and Permission Procedures for Industrial Complexes" was promoted.

The key contents of the Act are the installation of an industrial complex development support center, integrated establishment of development and enforcement plans, integration of the deliberation process with related organizations, procedures for mediation with related organizations, deliberation by the committee, and authorization and announcement of the industrial complex development plan.

2.2 New Town with Residential Function

2.2.1 Housing Site Development Promotion Act

The necessity of a powerful land development system was raised as housing site development according to the land readjustment project implemented since the end of the 1970s failed to significantly address the housing deficit, and because supplying large-scale apartment housing sites in response to the rapid urbanization in some metropolitan regions was difficult and problems, including the privatization of development profits occurred. To solve these problems, the "Housing Site Development Promotion Act" was enacted on December 31, 1980 to handle composite land development by encouraging the public sector to participate actively in the entire process of housing site acquisition, development, supply, and management. To resolve the urgent issue of housing insufficiency in urban areas, the Act aims at contributing to residential stabilization and welfare improvement by prescribing exceptions for the acquisition, development, supply, and management of housing sites.

The Act regulates the scheduled housing site development zone survey, designation of scheduled housing site development zone, and lifting of designation, matters to be stipulated when proposing the designation of a scheduled zone, management of scheduled zone designation promotion areas, establishment and authorization of housing site development plans, land use planning, plans to accommodate population and housing demand, establishment of district unit planning, commissioned development and authorization, and implementation of housing site supply. In addition, the Act prescribes details related to the establishment and authorization of the housing site development project enforcement plan as well as compensation and migration measures.

2.3 New Town with Complex Functions

2.3.1 Special Act on the Construction of a Multi-functional Administrative City in Yeongi and Gongju as Follow-up Measures for the New Administrative Capital

Passed in the National Assembly in March 2005, the Act prescribes the methods and procedures for building a multi-functional administrative city to resolve the ill effects of excessive population concentrated in metropolitan regions and aims at strengthening the national economy and balanced national development. The multi-functional administrative city is a composite city to be built centering on administrative functions as central administrative offices, and auxiliary organizations (president excluded) are transferred. The "Special Act on the Construction of Multi-functional Administrative City in Yeongi and Gongju as Follow-up Measures for the New Administrative Capital" was enacted on March 18, 2005 as Law No. 7391. On October 4, 2006, it was partially amended for the third time as Law No. 8050. The Act consists of 8 chapters, 71 articles, and supplementary provisions and also has an Enforcement Decree.

Prescribing the balanced development of the national territory, transfer of 2 offices, 4 departments, and 12 ministries of the central government, and distribution of 177 public institutes throughout the nation, the key contents of the Act include the designation and management of scheduled zones, multi-functional administrative city construction projects, promotion organizations, multi-functional administrative city construction special accounts, and support to project developers.

In detail, 12 ministries-Ministry of Finance and Economy, Ministry of Education and Human Resources, Ministry of Culture and Tourism, Ministry of Science and Technology, Ministry of Agriculture, Ministry of Commerce, Industry, and Energy, Ministry of Information and Communications, Ministry of Public Health and Welfare, Ministry of Environment, Ministry of Labor, Ministry of Construction and Transportation, and Ministry of Maritime Affairs and Fisheries-4 departments such as the Ministry of Planning and Budget, Ministry of Patriots and Veterans Affairs, Government Information Agency, and Ministry of Government Legislation, and 2 offices such as the National Emergency Management Agency and National Tax Service will be transferred. The National Assembly, Supreme Court of Korea, Ministry of Unification, Ministry of Foreign Affairs and Trade, Ministry of National Defense, Ministry of Justice, Ministry of Government Administration and Home Affairs, and Ministry of Gender Equality and Family as well as Cheong WaDae will remain in Seoul.

2.3.2 Special Act on the Development of Enterprise Cities

To encourage enterprise city development, the Act was enacted on December 31, 2004 with the goal of contributing to balanced national development and the national economy, as well as enhancing public welfare by accelerating investment from the private sector and planned development of the national territory based on provisions prescribing the schematic and proactive development and operation of a self-sufficient city in all areas covering industry, research, tourism, and recreation. The Act consists of 7 chapters-general rules, designation of development areas, implementation of development projects, support to project developers and tenants, improvement of settlement conditions in the enterprise city, committee, supplementary rules, and penalties-and 56 articles and supplementary provisions.

Key contents include the definition of an enterprise city, types of enterprise city such as industry and trade, knowledge-based and tourism and leisure cities, reversion of development profits in excess of the appropriate level generated by enterprise city development, estimation of development profits, prevention of privatization of development profits by private enterprises, designation of an enterprise city development project developer, land expropriation, and installation of schools and medical institutes.

2.3.3 Special Act on the Construction and Support of Innovation City according to the Transfer of Government Offices to Regional Locations

The Act aims to accelerate the transfer of government offices to regional locations, achieving balanced national development, and strengthening national competitiveness by prescribing details related to the construction of an Innovation City as per the policy to transfer government offices to regional locations pursuant to Article 18 of the "Special Act on Balanced National Development" and matters concerning support of the transferring government offices and their employees.

The Act prescribes the general details of the Innovation City construction, such as establishment of plans for the transfer of government offices to regional locations, establishment of transfer support plans by local governments, Innovation City designation, development, and support, designation of project developer, authorization of development plan, authorization of enforcement plan, access of others' land, fictitious authorizations and permissions, expropriation and utilization of land, etc., installation of infrastructures, deliberation on important Innovation City policies, special accounts for Innovation City construction, utilization of existing real estate and support for transferred government offices.

Chapter 4

Evaluation

1. Achievements and Tasks
2. Toward the New Vision of a Korean New City

Evaluation

1. Achievements and Tasks

1.1 Industrial New Town

The construction of an industrial city as a new town development type carries the function of a self-reliant city with industrial and residential functions. Construction as an industrial city continuously develops and grows as a type of new town in terms of a simple residential function-focused housing site development project. Nowadays, the industrial city retains its reputation as an industrial complex, with the national industrial complex representing the past industrial city.

Development policies for industrial complexes greatly contributed to strengthening national industries and local development in Korea. Large-scale industrial complex development has been one of the economic growth strategies implemented since the 1960s. The early industrial complex developments put more emphasis on developing large-scale industrial districts or sites, but residential and commercial development for workers were also built at the same time to create a self-sufficient city. These industrial complex developments led to large-scale satellite town (bed town) developments and provided an opportunity for them to turn into large-scale metropolitan cities.

Pohang and Ulsan were examples of cities which were developed as large industrial complexes and turned into large-scale cities. Pohang industrial complex was developed to accommodate 150,000 people and constructed asa large-scale industrial site with a harbor that could accommodate a 20,000-ton vessel in its pier. Ulsan was first developed by constructing the industrial complex sites first and building large-scale residential areas afterwards. Leading the national economic growth in Korea for five decades, Ulsan become a global industrial city and now serves as a center of a new coastal economic region.

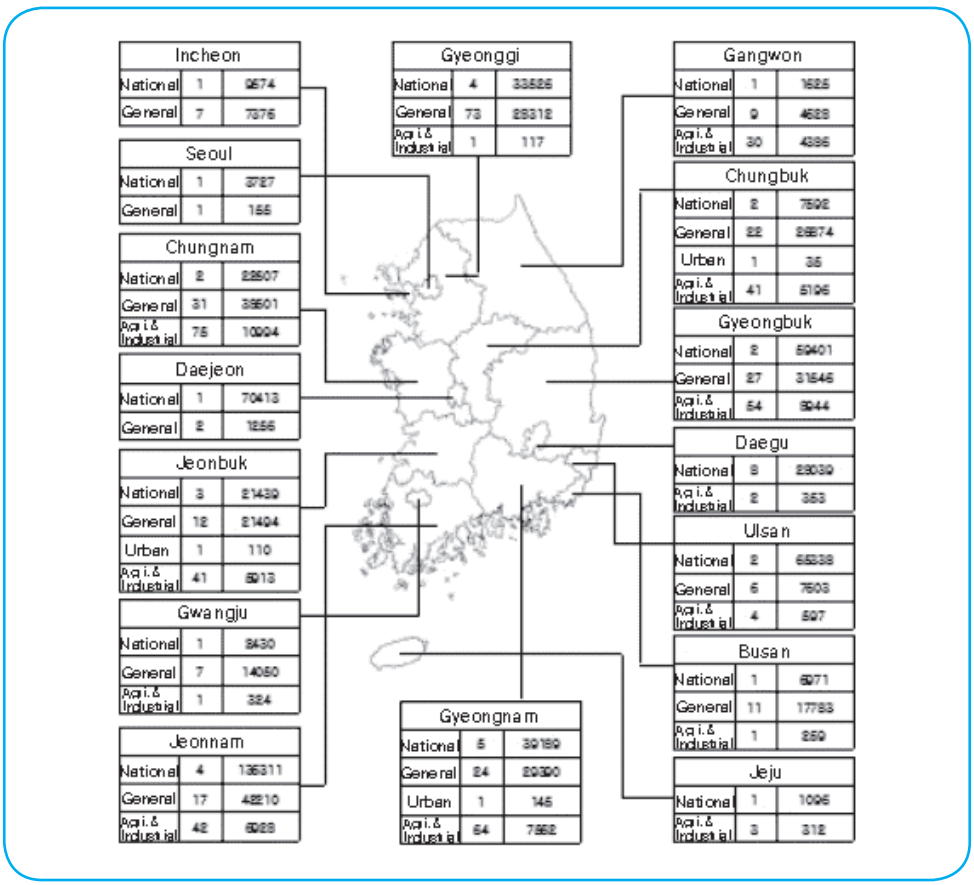
As for today's economy, competition is fierce thanks to globalization; as the industry's globalization rapidly progresses, the development and diffusion of cutting-edge technology are carried out quickly. To cope with temporal trends, it is time for new industrial functions to be discovered. The existing industrial structure's reorganization also needs to be addressed. Consequently, the existing growth engines within industrial cities should develop further, including new cutting-edge industries. Through the continuous management and development of past industrial cities focusing on manufacturing functions, as new cutting-edge functions are located in the surrounding areas, a network is formed, and a new cluster should be formed. The existing industrial cities should pursue incessant growth.

The industrial complex development policy has significantly contributed to Korea's industrial and local development. Large-scale industrial complex development was carried out as a key task for economic growth since the 1960s. As of the end of 2007, industrial complexes were formed in all cities and provinces nationwide; out of a total of 650 industrial complexes, 31 were national industrial complexes, 257 general industrial complexes, 3 urban cutting-edge industrial complexes, and 359 agricultural and industrial complexes. The total area was 832.53 million m^2. Through large-scale industrial complex development, national key industries were nurtured, based on which exports and economic growth were achieved. The areas where large industrial complexes were located served as a driving force that transformed the national territorial spatial structure through rapid urban development.

If public attributes are over-emphasized in industrial complex development, and policies are operated centered on planned location, but the elasticity of industrial site supply decreases, this leads to a mismatch between demand and supply. With the national territory's balanced development being emphasized in the industrial location supply plan, development was controlled in the Seoul Metropolitan Area where demand from companies was high; in provincial areas where demand was low, many industrial complexes were developed. Consequently, in some provincial areas, development was not made for a long time following industrial complex designation, or selling of the complexes took time after the construction of the industrial complexes. Moreover, industrial complex development was concentrated inthe Seoul Metropolitan Area and Yeongnam region in the initial stages, with some side effects such as traffic congestion, housing shortage, environment pollution, and water shortage occurring in those areas.

Future industrial complex development policy should focus on raising local industries' competitiveness and activate the development and application of technologies and knowledge. To do so, the policy needs to shift to value software including human resources, knowledge, technology, management, and leadership beyond physical infrastructure expansion as it was in the past. The policy should also be converted into the cluster type, inducing companies' voluntary integration at the desired time and place beyond supplier-centered industrial complex development and forced companies' physical integration.

Figure 4-1 | Status of Korea's Industrial Complex Development
(based on area, 2007)
(Number of Places, Thousand m^2)



Source : Ministry of Knowledge Economy · Korea Industrial Complex Corp. (2008). Statistical Status of Industrial Complexes Nationwide.

1.2 Residential New Town

In the 1980s, the housing supply was followed by constant urbanization, large-scale apartment complexes were constructed on the boundary of Seoul City. These complexes, called New Town, were constructed with the level of new town in scale and contributed to a large amount of housing supply. In the late 1980s when the housing price started rising, new town developments emerged to distribute the population of Seoul and stabilizethe housing price. New town constructions in areas including Bundang, Ilsan, Jungdong, Pyeongchon, Sanbon, etc., were undertaken and were called Phase 1 New Town.

The first generation new towns contributed to stabilizing the prices of real estate around the capital area by supplying a large number of residential units. The housing price had

greatly increased since 1989, but from April 1991 the housing price began to decrease. Although changes in Korea's macro economy led to the decrease in the housing price at that time, a large supply of housing units in the five new towns greatly influenced the housing price decrease. The annual rate of increase of the land price reached up to 30% between 1988 and 1990, but in the second quarter of 1991, the land price began to go down.

Although the new town development in Korea was focused on improvingthe living conditions of all income classes, 67.5% of the total residential units in the new towns were provided to low-income families that did not have their own homes. Also, the first generation new towns built well-designed community facilities and provided residential units with many rooms.

Five new towns around the capital area were built to create more housing, so their urban forms and development patterns were somewhat far from creating a garden city with a lot of amenities. However, these new towns supplied relatively more urban infrastructure and public facilities than traditional cities in Korea. This is because those new towns provided more urban parks, roads, parking lots than other existing cities around the capital area or the middle and small scale residential development projects built after new town completion. For example, the open space ratios of Ilsan and Bundang new towns are approximately 60% of the total urban area, which have even higher percentages than other residential development projects around those new towns.

Many transportation projects have been implemented in order to provide better accessibility to Seoul. For instance, 11 routes in Bundang, 8 routes in Ilsan, and 12 routes in Pyoungchon and Sanbon were newly developed or extended. Also, new subway lines such as Bundang and Kwacheon, and Ilsan lines were provided to the new towns by extending existing subway lines or adding new lines. These transportation projects in those five new towns contributed to providing better transportation services to residents and improving metropolitan transportation networks or systems throughout the capital area.

Despite these benefits, there were also many problems in developing the first generation new towns in Korea. According to some urban planning critics, they insisted that those five new town development accelerated the population concentration in the capital area and hindered balanced national development. Second, the new town development also caused an increase in commuting distance to Seoul and increased the housing and land prices in the new town areas. Third, large-scale development projects in the new town areas caused construction material and manpower shortages, increased price, and destroyed nature. To solve these problems, the government allowed the development of small-scale dispersed residential areas and semi-agricultural land development. However, this also caused other development problems like unplanned and disorderly development, especially around Yongin city.

The second generation new towns in Korea created a pleasant living environment through low-density development. Energy-efficient planning techniques through efficiency of urban spatial structure such as compact city and TOD were applied to the second generation new towns. Also, various types of development densities were used in constructing those

towns. The concept of net density was used for residential areas, and development density considering spatial structure of new towns was applied. The park area ratio of the second generation new towns increased 25%~35% of the total urban area, which is 10~12.5% higher than that of the first generation of new towns. The green space area per capita increased from 9,2㎡/person in the first new towns to 26.7㎡/person in the second new towns. Furthermore, the second generation new towns used advanced urban planning and design techniques such as green network, ecology parks, adoption of waterways, and mixed-use development.

While the first generation new towns put more emphasis on connecting their arterial roads to Seoul for better connectivity, the second generation new towns invested in connecting their surrounding areas with new transportation modes such as Bus-rapid Transit(BRT), green traffic, bicycle path, trams etc. In particular, those new towns developed a pedestrian-friendly streetscape by using traffic-calming techniques. Also, community facility complexes were built by combining cultural, welfare, and sports facilities in the second generation new towns. Also, the second generation new towns in Korea suggested residential layouts that connectedrental and lot-solid housing together for a social mix.

In addition, various urban planning techniques and urban management systems were applied to the second generation new towns: developing lands based on its topographic conditions, U-City, disaster prevention facilities, development of a close-to-nature river, and green preservation. Furthermore, local governments began to participate in the new town development process, and various facility complexes were built by private developers through project financing. For example, the Korea Land and Housing Corporation and Seongnam City are responsible for constructing the Pangyo new town; the PajuUnjeong new town for the LH and Paju City; the Kwanggyo new town for Kyounggi province and Suwon City.

However, among 13 new town development projects, only two-SeongnamPangyo new town and HwaseongDongtan District 1-are now completed. The other 11 new town development projects are suffering from a lack of funds due to LH's poor management and difficulty in land compensation. This was because the Korea government made a hasty decision. When the second generation new town development plan was considered, there wasa temporary increase in the housing price and the government thought that this was due to a housing supply shortage. Based on these facts, the government decided to implement many new town development projects in order to provide sufficient houses to the market. At that time, the government neglected long-range real estate forecasts. For these reasons, lands within the second generation new towns are not sold in the real estate market, and the government is having a lot of difficulty implementing the new town plans. Also, developing middle and large-scale residential units makes their construction and planning processes slower.

However, there were nontrivial problems with phase 1 New Town development. The following argument was given. "Balanced development of national land is hindered due to accelerating population concentration in the metropolitan area by the new town construction. New town construction increases transportation and commuting distances and causes a rise

of land price. A large-scale construction project adds inflation and creates a manpower shortage, and damages nearby natural environment."

Because of this argument, rather than large-scale new town construction, distributive development and semi-farmland development were allowed, but it caused individual and scattered development from the center of the metropolitan area like Yongin, and other problems.

1.3 Specialized Complex New Town

1.3.1 New Town Project

The New Town Project is a good policy in terms of a master plan approach for city area utility maximization and planned dwelling management. Note, however, that physical and social problems have arisen since the New Town Project was launched in 2002, including excessive designation in the target areas, existing residents' relocation issues, high-density development/demolition mode focused on securing business attributes, and project implementation centered on housing supply. The problems of the New Town Project are as follows:

First, the New Town Project development mode is mainly carried out by the private sector. The project is a plan to expand the public sector's role in basic development planning and urban basic structure improvement. It is intended to offer new residential environment in the relevant area by minimizing the private sector's burden and improving inferior infrastructure through the public sector's investment in urban basic facilities. Note, however, that the development mode is the same as the housing redevelopment project, reconstruction project, and urban development project. Therefore, the New Town Project should ultimately be a private sector-focused/demolition mode of development project. Consequently, it includes the problems emerging in the existing redevelopment, reconstruction and residential environment improvement projects such as the original local residents' low resettlement ratio, tenant's dwelling stability, and low-income bracket's residential space reduction. Moreover, given the fact that most new towns-except Eunpyeong New Town-are developed through private projects, there is a question as to what the differences of the project are, which is carried out to improve problems connected to development without considering the environment. Despite the advantage of flexibility in financial procurement and project implementation through the private sector, the urban environment results of the New Town Project can be fuzzy since the redevelopment project is carried out focusing on profitability.

Second, there are many designated districts in the New Town Project, and the designated district's size is too large. Looking into the new town district designation, the number of designated districts is 36 including the pilot, phase 2, and phase 3 new towns, accounting for about 10% of Seoul's total area of 605km^2. The new town districts' sizes are too large, ranging from 200,000m^2 to 330,5785m^2. Although the project includes plans for residential, business, cultural, and public facilities, the fact that the size of a designated district is large means that project implementation can be sluggish. Many designations of districts-and

large sizes at that-may trigger a real estate price hike by the psychology of expectation.

The third problem is the original residents' resettlement and tenant issues. Although the original residents prefer development by the private sector, it is not easy to return due to the burden of residential expenses arising from the increasing physical factors in housing improvement. Many places have been designated as new town districts, becoming the main cause of housing market disruption. Because of the large size of districts, project implementation becomes slow; the existing residents' relocation issue also worsens because of the additional expenses incurred.

Fourth, the residents suffer from the rise of key money in Jeonse (home rental by paying key money). Since homes are destroyed in the New Town Project implementation process, housing supply does not keep up with housing demand. Moreover, the New Town Project is simultaneously implemented; thus, the low-income tenants have not had many opportunities to stay where they are.

The New Town Project may be an attractive pledge in the election season, given the fact that the election pledge of the new town project was implemented in reality and in view of the voters' response to the new town pledge. Consequently, it is important to review and present a means of improving such a situation. In this regard, the improvements that Seoul City came up with and reviewed can be summarized as follows:

First is a measure to stabilize the Jeonse price in Seoul City. Specifically, Seoul City planned the Supply of 20,000 New Shift Homes as a means to stabilize Jeonse prices in Seoul in 2009. Seoul plans to supply the urban type of everyday life homes and multi-households/multi-home houses as much as possible and increase the entire housing volume in Seoul and adjust the home destruction period, arising from reorganization projects including the New Town Project. Regarding the issue of Jeonse prices, however, it cannot be solved by increasing the volume of homes alone. In the case of urban homes, they are just two-people homes and may be small in size for the low-income bracket in the New Town district. With parking lot regulations being eased, difficulties in parking in the residential area can worsen. In this regard, not only does the number of homes need to be considered, but also the residential quality needs to be considered.

Second, Seoul City tries to stabilize dwellings by supplying Shift Homes where long-term Jeonse tenants can live to address the housing market problems. Moreover, there is an attempt to increase the quantitative number of home supply by raising the floor space index based on housing redevelopment. The raising of floor space index should not be simply regarded as the increase of business attributes. Through the easing of the floor space index, the private sector's participation needs to be expanded, including infrastructure facilities reorganization and original residents' resettlement through development profits from such easing.

Third, Seoul adopted a public manager system to reorganize the redevelopment/reconstruction system in July 2009. The public manager system involves converting

redevelopment and reconstruction into public sector-led projects. In other words, the Gu (county) head selects reorganization companies and manages the association establishment committee and association president election process. By doing all these, the transparency of the reorganization projects can be enhanced through the public sector's intervention, and construction expenses can be reduced through project period reduction. The public sector's role is perceived as trying to gain active support beyond easing the burden of infrastructure installation expenses. Note, however, that there is a possibility of misunderstanding the behind-the-curtain administration causing irregularities because of the Gu head's authority in the public manager system. There should be a system to supplement the Gu head's authority in a balanced, supplementary manner. The public manager system is designed to manage the association establishment implementation committee process before project authorization; in this case, civil petition after project implementation should not be ignored.

1.3.2 Multi-functional Administrative City

In terms of national development, the Multi-functional Administrative City (MAC) focuses on serving as a catalyst city for balanced national territory development and an innovative city. The Multi-functional Administrative City plan suggests six functions-central government administration, culture and international exchange, local government administration, research and development, medical and welfare, and knowledge-based industry functions. In particular, the central government administration function is a core urban function, and sixteen central government agencies and twenty institutions will move to the city. The MAC plan will provide an opportunity to transform single-core national territory structure into a multi-core structure, and the following evaluation results can be suggested.

The inner area of the MAC had ideal locational characteristics, since it is close to Kyoungbu highway and Daejeon metropolitan area. This means that there may be a lot of possibilities that the MAC will be spatially subject to Daejeon metropolitan area in the future. For example, Kwacheon was developed as a new town to move some central government functions like the MAC. However, the current population of Kwacheon is only 56,000, which implies that Kwacheon is subject to Seoul metropolitan area due to its proximity. This may be the case for the MAC to Daejeon metropolitan area.

Second, the MAC plan suggests the six main urban functions, but except for transfer of central government offices to the city, transfer of facilities to support the other five functions has not yet been decided. Due to this reason, there are some controversies that only transferring 36 central government offices to the MAC cannot attract 500,000 people to the city. Therefore, the MAC plan should find a way to attract large-scale universities and high technology industry complexes.

Third, although the outer areas of the MAC were supposed to establish the supporting plans or policy measures, it actually served as a limited development district (like a green

belt). Due to this fact, people living in the MAC outer area are demanding the cancellation of the MAC outer area or proper compensations. To solve these problems, downsizing the MAC outer area should be considered-for instance, designating the areas within 1km from the boundary of the inner area as a new outer area. Also, the government should consider ways of purchasing lands in the newly designated outer area. Only the provision of community facilities to people in the outer areas does not necessarily reduce people's complaints.

As of 2011, the central administrative town and the first village project are now under construction in the MAC. The MAC is now expected to change the mononuclear national territory structure to a multi-core spatial structure. Although problems related to development of the MAC are somewhat based on a political agenda, the construction process should not be influenced by those political powers. The MAC planning and development issues should be dealt with by professionals with various knowledge backgrounds.

1.3.3 Enterprise City

The Enterprise City development project was proposed to the government by the Federation of Korean Industries(FKI) in 2003 in order to encourage company investment and create jobs. The Korea government announced the pilot program for the Enterprise City development in January 2005, and six areas (Wonju, Chungju, Taean, Muju, Muan, Youngam, and Haenam) were designated as pilot areas for the Enterprise City development.

As of 2010, all designated areas finished establishing the Enterprise City development plans, but only three areas (Wonju, Chungju, and Taean) are now under construction. Among those three, only the Chungju Enterprise City area has had significant progress in its construction with 67.2% and has sold 46% of the development land area. Whereas, the percent of the construction progress of the Wonju Enterprise City is only 8.3%, which is much lower than that of Chungju. The other three areas did not start construction yet.

There are three reasons why the Enterprise City development plans have not made any progress. First, the financial standings of domestic companies became worse. In particular, due to a global financial crisis, which badly influenced the Korean economy, many domestic companies could not invest in the Enterprise City projects. Second, the Enterprise City development projects require large-scale investment in infrastructure within the area, so development profits after completion are relatively lower than other development projects. For example, the Muju Enterprise City area was designated in a rural area which did not have any infrastructure to support businesses and industries, so the government made a decision to cancel the designation of the Enterprise City development. Third, the government launched all six Enterprise City development projects at the same time, so development demands were spread throughout those areas, and development profits also become dispersed. As of 2011, apart from the number of Enterprise Cities, there are the Multi-functional Administrative Cities, 10 innovative cities, the Saemangeum City, and two high-tech medical complex developments under construction. The total area of these

development projects is 804㎢, and the total target population of the projects is about 3.1 million. Also, the total construction cost is about 14.7 trillion Korean Won(147 billion US dollar). Therefore, it is difficult for the Enterprise City designated areas to create sufficient development profits among those large-scale city development projects.

Although the Enterprise City development projects are led by private development companies, the government also supported feasibility studies on the Enterprise City projects, and local municipalities partially supported infrastructure construction costs. As mentioned above, the Enterprise City projects are now having a lot of difficulty because of investment companies' worse financial standings and low development profits after completion. Therefore, in order to achieve "national economic growth and balanced national territory development by encouraging private investment" mentioned in the special act of the Enterprise City development, national and local governments, as well as private development companies should develop new approaches to implementing the Enterprise City development projects.

2. Toward the New Vision of a Korean New City

Many developed countries and even private urban development companies have exported the New City planning technologies. Japan has exported their new town planning techniques to Southeast Asian countries since the early 1990s. Singapore recently promoted their urban planning techniques as a competitive national industry and exports them to China. Siemens, a private company in German, also regards the new city development techniques as a new and innovative business field and tries to export their techniques to the new city development market.

2.1 Case Study on the Export of the New City Development Techniques by Private Companies in Korea

A member of the Korean National Assembly insisted that it was time to export Korean New City planning techniques and construct 100 Korean-style new cities in foreign countries. He also added that although some construction companies such as Daewoo, POSCO, and GS were developing new cities in Vietnam, Kazakhstan, and Algeria, they were somewhat limited to civil construction. Therefore, he pointed out that they should consider exporting Korean-style new cities and planning techniques to foreign countries which included advanced science technologies and experiences about economic growth in Korea.

It was when President Moohyun Roh embarked on a tour to three Asian countries-Mongolia, the Azerbaijani Republic, and the United Arab Emirates in May 2006 that an official discussion on the export of Korean-style new cities emerged. Through the project named 'Silk Road', President Moohyun Roh proposed to the President of the Azerbaijani Republic that Korea would initiate a Korean planning experience and techniques for a new city that can accommodate 500,000 residents.

After the project 'Silk Road', large companies which have experience and techniques in building new cities in Korea started to consider exporting Korean-style new cities to foreign countries. Although there are only a few large-scale new city development projects due to the recent global economic downturn and financial crisis, the penetration of the global new city market provides Korean large development companies with an opportunity to make development profits outside the country-from a new city development project with a 350,000 population such as Hanoi New City in Vietnam to mixed-use buildings in Cambodia, Kazakhstan, Algeria, and UAE.

Exporting new cities to foreign countries does not mean constructing urban infrastructures by using reinforced concrete or asphalt. By building residential and commercial buildings, parks, and factories in a new city, other products made in Korea can be exported to foreign countries and spread Korean culture and lifestyle as cultural products. In addition, Korean manufacturing companies can move in Korean-style new cities and foster their economic growth. If young people in Korea move to foreign countries, they can play a major role in serving as a bridge for business partnerships with foreign companies.

Finally, if we succeed in getting rights to resourcesin exchange for new city developments in oil-producing countries, we will have a stable energy supply in the future. The problem is, however, not how many new cities we should construct, but how to implement the export of Korean-style new cities to foreign countries. The export of new cities and its planning technologies does not mean that Korea is pillaging their properties or resources as an imperial power. It is a collaboration process with the Third World countries. This is why our export of a new city to foreign countries should not be limited to winning contracts of simple civil construction projects.

2.2 Exporting a Korea-style U-City

Recently, new cities in Korea-such as Songdo, Pangyo, and Byeolnae-are now transformed into U-City. By using the U-City concepts and technologies, those cities will become more convenient and safe cities. For example, when a big fire broke out in the city, the location information of the accident will be automatically sent to a central disaster control system and fire stations nearby. The houses in the U-City will also provide advanced residential services. When people get up, they can receive various types of information automatically and have a well-balanced meal. When they go to the bathroom, their health status will be automatically checked. When they have health problems, a medical institution will be automatically connected and they can receive their health records. Actually, the Kyoha new city development plan suggests providing user-oriented welfare services by using individual identification tags.

As of 2011, the annual U-City market has grown to about 300 billion Korean Won (300 million US dollar). The government is considering the export of U-City to foreign countries by holding road shows in Columbia in 2010. At the show, the government will suggest an

U-City master plan and make a U-City MOU contract with foreign countries. By 2013, the Korean government thinks that about 60,000 jobs related to U-City will be created and 10% of the total U-City market volume (about 240 billion dollar) will be occupied by Korea. To achieve this goal, the government will spend about 490 billion Korean won (490 million dollar) developing an U-City industry for the next five years.

2.3 Directions for New Cities in the Korean Urban Planning Context

As of 2010, the amount of money from foreign construction in Korea wasa total of 49.1 billion dollars. Considering the prolonged high oil prices and plant contracts, over 74 billion dollars will be made from the foreign construction industry in 2011.

However, in order for the foreign construction industry to play a major role as a future strategic industry in Korea, various kinds of new construction products and brand marketing is necessary. Among them, new city development in foreign countries will serve as a new engine for national growth and a blue ocean in the future. In case of developing countries, there are rapid urbanization and a strong demand for new cities. Also, oil-producing countries in Africa, Middle East and Central Asia want to build new cities by using their oil money. As of 2011, there are 108 new city projects (940 billion dollar) throughout the world, and by 2015, the new city market will increase to 1.86 trillion dollar.

Korea has had various experiences and possesses construction technologies about new city development, and the government is developing new urban planning products which graft IT technologies into existing urban planning systems-such as U-City, Eco-City, and High-tech Green City. Considering the huge demand for constructing new cities and SOC infrastructure in developing countries such as China, India, Nigeria, and Vietnam, it is time for the Korea government to consider a new city construction industry as one of its national strategic industries in the future. However, in order for a new city construction industry to serve as a strategic future industry in Korea, export strategies of new city construction linked with other industries should be established first. New city construction in foreign countries is closely related with other industries such as electronics, mechanical, telecommunication, and consumer-electronics industries. Therefore, there will be a lot of chances for other industries to launch their business where a new city is built. Also, after a new city construction is completed, other industries still remain there for continuous management and services.

Second, in order to establish systematic strategies for a new city development, product and information, labor and finance should be prepared. Also, detailed analyses on diverse demands and requirements for a new city development, new city products to meet standards in foreign countries, and brand marketing of a new city are necessary. For potential markets that are rather difficult for individual development companies to open their businesses, the government should collect relevant information and secure networking systems with those markets instead of individual development firms. In order to achieve this goal, the

government should prepare for comprehensive supporting policy actions and organize systems for export of a Korean-style new city. Specifically, diplomatic policies for a summit discussion on exploitation of new markets with foreign countries and up-front investment in public sectors of foreign countries should be required. Furthermore, to support overseas expansion of domestic companies, the government should establish systems for collecting and analyzing exact market information and develop a government-led monitoring system which can assign separate roles for government departments, public agencies, finance institutions, private companies.

According to the "Global Construction 2020", the market volume in construction is about 750 billon dollar, which is 13.4% of the total world GDP. The report adds that by 2020, the construction market will increase to 1.27 trillion dollars, which is 1.7 times bigger than the current market. USA, China, India, Russia, Brazil, and Poland will be the leading countries in the construction industry, and new construction markets will be open in India, China, Asian-pacific countries, Middle-east countries, African countries, and some Eastern European countries. The construction market of these countries will reach up to 17.2% of the total world GDP which is 2.1 times bigger than the current market. On the other hand, the growth rate of the existing construction market in developed European countries will go down rapidly, and the construction market in Japan will also shrink due to a decrease in population and severe government deficit. The new city construction market in the UAE will greatly decrease in the future.

The share of developed countries in the world construction market in 2005 is 65%. However, in 2020, the share of developed countries will go down to 45%, while the share of countries leading new construction markets will increase up to 55%. In particular, SOC investment and development for a new city will be a main item in the rapid growing construction markets of developing countries. The growth rate of SOC construction in the new construction market of developing countries will be 128%, whereas the rate in developed countries will be only 18%. For instance, Nigeria will be a developing countrywhich will experience rapid market expansion in SOC construction although there may be pressure on urbanization by using huge amounts of profits from oil production (The construction market volume in Nigeria is 3.5% of the total national GDP).

Construction industry in Korea was one of the main national growth engines from the 1960s when construction workers went to Vietnam and through 1970 when there was a construction boom in the Middle-east countries. In the 21st century, the world construction industry is facing a rapid structural change. Developed countries which have led the world construction market are now relatively shrinking, and new developing countries such as India, China, Nigeria, Vietnam, and Poland are experiencing rapid growth in their construction market. Also, demands for SOC construction to adapt to rapid industrialization and urbanization are getting strong in those countries. Considering this aspect, export and construction of Korean-style new cities to developing countries can be a brand item which has a competitive advantage over the construction industry in developed countries. New

city development experiences in Mongolia, Algeria, and Vietnam showthe possibility of a new city construction industry being a brand product at the national level.

To retain a competitive advantage over developed countries in new city construction industry, intimate collaboration throughout industrial fields as well as pan-government efforts are necessary. The Korean government should let foreign countries know that a competitive advantage of new city development products over other countries such as China and India is not SOC development (ex. water and sewage, roads, etc.) but new cities itself as a catalyst for strong economic growth. Therefore, theconstruction industry should find ways of developing collaboration with other relevant industries. The seawater desalination plant construction project as a part of a 10 billion dollar large-scale project in Ghana, Africa and a new city development project with 23,000 houses by the STX construction company is a good example of exporting new city development products with other relevant industrial products.

However, we should know that as in the case of Bouinan, Algeria, there will be a lot of problems in the new city development process. This is because we do not have experts who can carry out foreign new city development projects and because there is no system which can collect and manage exact on-site information. To solve these problems and develop a new city construction industry as a main strategic national industry in Korea, the government and private development companies should train professionals for foreign new city construction development, as well as research and develop new city construction. Also, a system which can collect and manage information on demand for new city development in foreign countries should be established as soon as possible to nurture the new city construction industry in Korea.

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Appendix : Transition Process of Laws and Systems by Type

1. Overview

The features of Korea's national territory since the 1960s had been the local policies of urban development wherein agricultural and fishing villages were converted into cities and existing cities were converted into large cities under the logic of top down development and asymmetric growth. Such national territory policy affected the Seoul Metropolitan Area; thus, the national territory development policies and Seoul Metropolitan Area had almost parallel and correlated relations. The Seoul Metropolitan Area policies since 1960 can be divided into the following 4 periods from the city management policy standpoint:

First is the control policy period (1960~1970). Policies to control population concentration in Seoul and Seoul Metropolitan Area were implemented. Under such population control policy, the following were carried out: Population Concentration Prevention Measure (1964), devising specific areas designation and satellite cities between Seoul and Incheon (1965), Basic National Territory Ideas and Large City Direction Policy (1968), measure to adjust the population and relevant policies in large cities (1969), Basic Instructions on Overpopulation Concentration Control in the Seoul Metropolitan Area (1970), and development including Seongnam complex development and YeongdongJamshil area development, and Daedeok academy and research city construction.

During the period, however, the local population control policy did not generate positive effects since population movement into large cities was accelerated through huge new job opportunities in the urban areas, thanks to economic growth.

Second is the distribution policy period (1971~1976). During this period, the population distribution policy was implemented at the nationwide level to pursue reorganization and balanced development of national territorial spaces. With adequate management in large cities, when urbanization was carried out along with the advancement of industrialization, the need for reorganization and balanced development of national territorial spaces-which can be carried out under mutual linkage relationship-emerged rather than individual and local policies. Such distribution policy was preconditioned to promote new change in national territory use by designating strongholds aimed at nationwide balanced development, distributing population and industrial functions into those strongholds. Policies presented under such logic include the following: First Comprehensive National Territory Plan (1972~1981), Deployment Policy of Satellite Cities in the Seoul Metropolitan Area (1971), Establishment of Development Restriction Areas (1972~1981), National Territory Use Management Act (1972), Population Distribution Policy in Large Cities (1972~1973), and Population Distribution Plan in Seoul (1975). The nationwide population distribution policy affected the policy of the population's movement to the south by developing the Southeast Coastal Industrial Belt. Moreover, the policy scattered national territorial development by limiting the area equivalent to 5.4% of the total national territory. In addition, the construction

of Gwacheon New Town where General Government Office 2 is located, Banwol New Town Construction, a new industrial city in the Seoul Metropolitan Area (1977~1987), and Yeocheon New Town Construction, a hinterland city of an industrial complex (1977~1986), was implemented. Note, however, that spatial recognition on the balanced development of the Yeongnam and Honam regions was insufficient in those days, and the environmental destruction caused by industrialization was not sufficiently considered. The period did not actively cope with the phenomenon wherein population and industrial activities expanded to the surrounding areas of large cities as the logic of integration maximization.

Third is the period of accommodation policy (1977~1990). During this period, the positive theory of large cities or large city acceptance theory was based on local policies, i.e., population trends cannot be prevented in areas with population absorption capability. The policies proposed in this period included the following: Basic Plan of the Seoul Metropolitan Area Population Re-Deployment (1977), enactment of the Industrial Deployment Act (1977), Five Major Base City Region Policies and Temporary Administrative Capital Concept (1978), Second Comprehensive National Territory Development Plan (1982~1991), Growth Base Cities and Living Zone Plan and Policy (1981), Public Railway and Large-Scale Architectural Regulations Plan (1982), and Seoul Metropolitan Reorganization Plan (1982).

In these policies, the details of over-density of areas, settlement zone, national territorial multicore formation, expansion of integrated profits, and inducement of local settlement of population were emphasized. In particular, in the comprehensive national development plan presented in 1981, South Korea was divided into 8 regional living zones, and 12 cities including the first growth base cities (Daegu, Gwangju, Daejeon), second growth base cities (Chuncheon, Wonju, Gangreung, Cheongju, Cheonan, Jeonju, Namwon, Mokpo, Suncheon, Andong, Jinju, and Jeju) were promoted for intensive development; the provincial population's local settlement was also propelled. The Seoul Metropolitan Area was divided into five regions-relocation promotion region, restriction reorganization region, development inducement region, natural preservation region, and development reserve region-and the efficient operation of the regional management system was attempted. Note, however, that Seoul, Busan, Daegu, Gwangju, and Daejeon were transformed into metropolitan city regions, becoming key points that led the national territorial and spatial system. Nonetheless, non-urban areas including small and medium-sized cities and agricultural and fishing villages became relatively more outdated, with the whole land reorganized into spatial structure in the metropolitan areas and non-metropolitan areas.

Fourth is the period of expansion and development (before and after the 1990s~present). In the Seoul Metropolitan Area, five residential new towns were built in Bundang (Seongnam City), Ilsan (Goyang City), Jungdong (Bucheon City), Pyeongchon (Anyang City), and Sanbon (Gunpo City) around 1990. A series of regional policies starting from the construction of Bundang new town changed to expansion policies of actively developing cities beyond the accommodation dimension. The policies presented during

this period include the Seoul Metropolitan Area Reorganization Plan Act and revision of its Enforcement Ordinance (1993), Second Seoul Area Reorganization Plan (1995), and Third Seoul Area Reorganization Plan (1996). The expanded development policy taken since the 1990s was linked with housing policies. The Bundang new town construction was a turning point, the direction of housing policies in the Seoul Metropolitan Area shifted to the housing production expansion policy including reconstruction, inferior district improvement, housing construction for poor people, and 2 million homes construction from the previous speculative demand control policy. To this expanded development policy, a logic that growth-possible areas need to be nurtured more intensively and equipped with competitiveness to cope with globalization by easing regulation was added. Consequently, semi-farmland 1~2 times larger than Seoul in the Seoul Metropolitan Area was formed through the revision of the National Territory Use Management Act. Note, however, that restaurants, hotels, and recreational complexes were located in the waterworks preservation region in the Seoul Metropolitan Area, and large-scale housing complexes and non-allowed industrial facilities were set up, which translated into rapid environmental deterioration; thus, the logic of globalization almost lost its legitimacy. With action taken to ease the regulations in the Seoul Metropolitan Area, the growth of the non-Seoul Metropolitan Area was rapidly declining.

Korea's regional development strategies since the 1960s enhanced overall economic capabilities by industrial growth but deepened the imbalance between regions, divided the metropolitan cities and non-metropolitan cities, and caused land speculation. In particular, land speculation caused a vicious cycle so that buying a home became difficult by means of normal savings coupled with the irrational housing market mechanism. Through the oligopolistic phenomenon by capital and capable people, the accelerated hike of housing and rent prices occurred. Constituting about 5% of the total population, the upper class earned income from real estate amounting to KRW 110 trillion in 1988 alone by acquiring 65.2% of privately owned land nationwide using financial capital and commercial capital. Meanwhile, those with insufficient ability to purchase a house have been increasing over time, which makes it difficult to realize the dream of having one's own home. Furthermore, tenants suffer from physical and mental pain because of rent hikes.

2. Before the 1960s

2.1 Construction Policy for City Reconstruction

The only law to restore cities after the Korean War was the Joseon Town Plan Ordinance enacted during the Japanese Colonial Rule. The law, which was handed down from the Japanese colonial rule, remained without evolving due to disorder arising from the social chaos and aftereffects of the Korean War. Although the need for the Urban Planning Act or Architecture Act was recognized, the conditions were not prepared to institutionalize the laws and develop them further. Nonetheless, the need for urban planning rose to cope with the rapid concentration of population on cities while reconstructing urban infrastructure

destroyed by the war. Such urbanization was carried out without industrialization, and excessive enthusiasm on education arose from overpopulation. Therefore, the maintenance of the school facilities emerged as an important social issue. Urban planning for reconstruction began after the war in many cities, with urban plans devised for 25 cities until the new Urban Planning Act was enacted and enforced in 1962. The Act gave small hope for destroyed cities; it was an attempt to deliver a message of hope for the future.

Thanks to reconstruction and restoration projects on the agricultural and industrial production infrastructure except housing and public facilities in the latter part of the 1950s, economic activities were restored to the pre-war level. Moreover, the realization of economic development and need for reorganizing the urban planning system emerged. In 1958, the National Territory Planning Association was launched, and the Second Republic established in August 1960 drew up the 3-Year Economic Development Plan under the supervision of the Industrial Development Committee of the Reconstruction Ministry. By newly founding the Construction Ministry to replace the Reconstruction Ministry, the preparation to implement the plan began.

3. 1960s~1970s

3.1 Policies to Respond to Urbanization

With the Urban Planning Act and Architecture Act enacted in 1962, modernized institutional means for city management were devised. The newly established Urban Planning Act had many differences from the Joseon Town Plan Ordinance in various aspects.

First is the separation of details of the Urban Planning Act and the Architecture Act, which were integrated in the Joseon Town Plan Ordinance. Moreover, a new urban planning decision procedure was adopted.

Second is the supplementation of area and district system through segmentation.

Third, the inferior district improvement project was newly established, and the building site development project was abolished; urban planning facilities requiring public attributes in the full-blown urbanization age-such as amusement parks, green areas, and school facilities-were also added.

Fourth, the procedures for the regulations of the land section reorganization project were supplemented, and national, public asset disposal was limited; a precise city study was carried out as well.

In 1963, the Urban Planning Act was revised in the first phase to recognize Seoul's population concentration problem and to include population distribution policy-related facilities in the urban planning. Regulations to decide expressways and translation facilities as urban planning facilities were also included. In case of installing urban planning facilities outside of the urban planning district, regulations that can apply some of the Urban Planning Act were newly enacted with the authorization of the Construction Minister. Besides, there

was action awarding flexibility in the rigid usage area system by reviving the mixed areas, which were abolished at the time of enacting the Urban Planning Act.

Due to the rapidly progressing urbanization in 1966, the Land Section Reorganization Project Act was enacted separately to cope with the housing site demand. The separation and expansion of the act from the Urban Planning Act were intended to prevent confusion in the business procedure arising from the application of the Urban Planning Act and the Farming Land Development Business Act.

In 1971, the Urban Planning Act was wholly revised. In comparing the revised Urban Planning Act with the old Urban Planning Act, the new act emphasized the regulations on land use within a city. The revised act also segmented the relevant area into 17 districts and set regulations requiring obtaining the permission of the mayor/Gun head for all development activities including land property changes. Moreover, three districts-specific facilities restriction district, development restriction district, and planned urban development district-were newly set to implement the town development projects systematically. Meanwhile, the former Urban Planning Act maintained the framework of the Joseon Town Plan Ordinance to some degree, whereas the newly revised Urban Planning Act revised and expanded the system considerably and responded to new urban planning demands.

3.2 Industrial City Construction

The government enacted the Industrial Base Development Promotion Act in 1973. In the 1970s, as the industrialization policy was converted into the heavy chemistry industry, a system to implement a large-scale industrial complex development project was necessary. Meanwhile, the Industrial Base Development Corporation, a state company, was in charge of industrial complex development projects; the Industrial Base Development Promotion Act, which awarded powerful authorities and functions, was enacted. The main feature of this Act was the regulation on agenda on permission and approval. According to this Act, permission, authorization, consent, and approval were deemed received under the following laws from the time of receiving approval for the implementation plan of industrial base development projects: Urban Planning Act, Waterworks Act, Public Water Reclaiming Act, Port Act, River Act, Road Act, Act on Farming Land Preservation and Use, Forest Act, and Act on the Crackdown of Forest Projects.

The period 1960s~1970s is characterized by the reorganization of development-related legal systems, establishment of public development modes, and expansion of large-scale urban development projects. With the Industrial Base Development Promotion Act enacted in 1973, an opportunity for the public sector to participate actively arose, and the participation scope was expanded. Through the enactment of this Act, the new town development project, which depended only on the land section reorganization project, could be expanded to public-sector development. The public sector served as the main player of the project and bought massive tracts of land. Consequently, large-scale new towns were

built on a short-term basis, and a good urban environment was developed. Nonetheless, the fact that the existing legal system was ignored to implement a specific project-which was the industrial complex development-effectively remains to be an assessment task.

Based on the Industrial Base Development Promotion Act, three shipyards-Ulsan, Okpo, and Mipo-and nuclear power plants including Gori and Wolseong and Daedeuk Research complex such as industrial complexes and hinterland cities including Banwol, Yeocheon, Gumi, Changwon, Pohang, and Gwangyang were developed. In particular, the industrial complex's hinterland cities such as Banwol and Changwon were planned as new towns, which were the first ones of their kind. The plan to build the Banwol new town was established in July 1976 to distribute Seoul's population and industries, and construction commenced in July 1977. The target population in the initial stage was 200,000, but it is now a city with over 500,000 people. The development of such an industrial city played a pivotal role in advancing economic growth, but serious air pollution and environmental problems arose as side effects. All these problems caused huge changes in future urban planning.

3.3 Urban Growth Management

The development restriction area is also called greenbelt, referring to the belt-shaped restricted area of development in the suburbs of a town. The greenbelt system as the origin of the development restriction area began in the UK, but each country's system is different in terms of how it is enforced. The institutionalized concept of greenbelt in Korea is that greenbelt is one of the districts designated as urban planning under the Urban Planning Act. It is a special area to prevent the city's expansion, preserve the national environment surrounding the city, and manage indiscriminate urban growth.

The background of the system's adoption can be found from the concentration of population and industries in large cities, according to rapid urbanization and industrialization since the 1960s. With the population of Seoul exceeding the 3 million mark at the end of 1963, the government began to make diverse efforts to prevent the concentration of population and industries in large cities such as Seoul and Busan after recognizing the seriousness of the problem. Note, however, that various policies attempted to distribute the population and industrial facilities by 1970 were not very effective. Therefore, the President of Korea instructed the designation of greenbelts in his annual inspection of Seoul City in January 1970.

According to the revision of the Urban Planning Act in January 1971, the first development restriction area was designated around Seoul on July 30 1971, six months after the system was established. Since then, the areas were designated 8 times for 6 years until 1977; thus, development restriction areas were designated in 14 city regions nationwide.

In the Seoul Metropolitan Area, the development restriction areas were designated four times from 1971 to 1976. The development restriction areas were designated in 10 regions in the Gwangju, Jeju, Daejeon, Chuncheon, Jeonju, Ulsan, Masan/Jinhae, Jinju, and Chungmu

regions in 1973, following the Busan region in 1971 and Daegu in 1972. The development restriction area was designated in the Yeocheon zone in 1977. As a means of managing urban growth in a planned manner and protecting a pleasant settlement environment, it can be considered a historic event in urban policies. On February 25, 1998 and February 24, 2003 under the Kim Dae-jung Administration, although there were some adjustments in the development restriction areas, the urban policy related to the development restriction area was positioning itself as a key means of protecting the urban environment. Korea's development restriction area has been managed strictly so no similar cases can be found in any other country except the UK. Note, however, that there are some negative aspects in land ownership; thus, some development restriction areas were canceled in the 2000s. Nonetheless, protecting the pleasant urban environment still makes for a good urban policy. The greenbelt is a policy to develop a pleasant urban environment.

4. 1980s~1990s

4.1 Era of Housing Supply for Ordinary People

As for the urban policies in the 1980s, the interest of the low-income households in dwellings and their perception increased as residential problems including the reorganization of inferior dwellings emerged due to urban problems. Such residential problems were to be solved through housing supply such as the construction of new towns. The construction of 5 new towns implemented by the Roh Tae-woo Administration (February 25, 1988~February 24, 1993)-such as Bundang and Ilsan-was the biggest urban policy of its time. Such construction of new towns is the result of a policy established by supplementing the laws and systems and realizing the objectives under the goal of constructing 2 million homes. In particular, the Chun Doo-hwan Administration (September 1, 1980~February 24, 1988) in the early 1980s achieved the quantitative goal of housing supply through the enactment of the Housing Site Development Promotion Act (December 31, 1980) and intended to solve the problem of housing shortage and stabilize the residential environment of low-income households. Through the enactment of the Housing Site Development Promotion Act, the possible housing sites required for housing construction were acquired in large quantities, and low-priced sites were developed and supplied. Consequently, the act contributed to the stability and welfare improvement of residential living. Through all this, Korea's new town development projects characterized the rehabilitation period.

The revision of the Urban Planning Act in 1981 was evaluated to change the urban planning into a more developed one in terms of the establishment of a planning system and the aspect of citizens' participation systematization. With the adoption of the instructional and comprehensive features of basic urban planning and annual implementation plans, urban planning newly established its place. For the democratization and opening of urban planning, opportunities to present the proposal to local residents through public hearings before legislation and decisions were offered so that the requests of the residents can be reflected in urban planning.

4.2 Existing Town Management

The adoption of the Urban Design System on January 4, 1980 to manage the existing cities systematically was an epochal event in Korea's urban policies. The Urban Design System was adopted as an exception regulation on buildings within the city center under Article 8.2 of the Architecture Act. The regulation including the definition of urban design, district designation, criteria for drawing up the design, and decision process set forth urban design as a long-term comprehensive plan to enhance the city's functions and aesthetics. The target district was to be designated with a minimum of 15,000m^2 only for the city center or principal road. The details of urban design specified the urban planning facilities and land use plan according to the urban planning and included details on the location, size, usage, shape of buildings and public facilities, and vacant land.

Immediately after such a legal basis was devised, a study on more detailed and specific urban design establishment criteria was commenced. "A Study on Urban Design Establishment Criteria" in 1981 completed by the Ministry of Construction in 1981 is a prime example. Based on the study, the Ministry made regulations on urban design establishment criteria in 1983. In other words, regulations that enumerated the planning criteria becamethe urban design establishment instructions,details included the kinds of relevant books, marking details, and subsequent urban design factors. Consequently, a systematic urban design framework was developed.

As a means of improving the control action of high-rise buildings within the four ancient gates of Seoul in 1983, urban design on the principal roads of the city center in Seoul was applied for the first time, and urban design on 20 districts in Seoul was drawn up until 1988. Among them, the designation of 5 districts was canceled because of civil petitions, and the other 2 districts were included in the other development plan; thus, the actual number of implemented districts was 13. The main urban designs implemented in Seoul were as follows: Garak/Gaepo district to enhance the quality level of residential complexes, Godeuk/Mok-dong district designated together with new town development projects by public development, Yulgok-ro designated for the preservation of traditional houses and history and environment and traditional houses preservation district in Insa-dong, and Gimpo street and Teheran-ro district to enhance the esthetics along the principal roads. In provincial areas in addition to Seoul, quite a number of urban designs were applied and implemented. The Cheolsan district in 1985 and new town in Seoguipo in 1986 are examples wherein urban design was applied for the formation of the new town. Furthermore, urban design was applied to Changwon City, which was developed as an industrial city in 1983, and Ansan City in 1986.

The regulations on urban design were greatly revised, and the details on the purpose of urban design, designation of urban design areas, and reorganization of urban design were newly regulated in Articles 60 and 63 of the Architecture Act. Specific matters include the regulations on the planned development within the special business district. The special business district was targeted for the large-scale development projects set forth by

Article 64 of the Architecture Act and Presidential Ordinance. The planned development targeted buildings within the designated and announced areas for residential environmental improvement and efficient use of land. In this context, some of the architecture criteria set forth by the Architecture Act and Presidential Ordinance were eased by obtaining the approval of the Construction Minister. This system is a kind of exceptional accreditation system enabling general regulations set forth by the Architecture Act on the construction activities within certain business areas to induce active participation in the project on developing a high-quality environment.

4.3 Enactment of the Housing Site Development Promotion Act

The enactment of the Housing Site Development Promotion Act has been greatly affecting the urban management and development types since the 1980s. This Act was enacted to achieve the quantitative objective of housing supply, and supply housing sites effectively.

Consisting of 34 articles of the preamble and supplementary provisions, this Act can be regarded as another Industrial Base Development Promotion Act because of many similarities in terms of its development method or characteristics since the purpose lies in the large quantity of housing sites. The difference lies in the large-quantity of housing sites. The acts are similar since they are legal and institutional systems to strongly back up public development, but the efficient implementation of the housing development project is secured through the regulation of the agenda on permission and approval. In the Housing Site Development Promotion Act, the project implementers are diverse: the nation, local governments, Korea Land Corporation, and Korea Housing Corporation. Note, however, that the use of architecture led by the nation can be the same unlike in the Industrial Base Development Promotion Act. The Housing Site Development Promotion Act is similar to the Industrial Base Development Promotion Act since the procedures for permission, regulations, consents, and approvals as set forth by 18 acts including the Urban Planning Act, Land Section Reorganization Business Act, Housing Construction Promotion Act, Land Use Management Act, Land Expansion Development Promotion Act, and Industrial Base Development Promotion Act can be excluded through simplified procedures.

5. After 2000

5.1 Era of Accommodating Complex Functions

In the 2000s, urban policies have been implemented to prevent indiscriminate development without considering the environment and create sustainable urban spaces. The urban planning system was drastically changed. The existing Urban Planning Act and the Land Use Management Act were integrated and were unified into the Act on National Territory Plan and Use; this signified a paradigm change of urban planning. New urban planning has

institutionalized the concept of preventing indiscriminate development without considering the environment in the semi-agricultural and forest areas.

In the 2000s, awareness of the urban environment developed further. The improvement policy on public spaces in the city center represented by the Cheonggyechon stream regeneration project triggered the paradigm change opportunity on sustainable urban development. The city center environment of Seoul represented by overpasses and tool stores was regenerated into a natural river, and the area was rejuvenated. Public spaces where environment and development are in harmony in inner city spaces were created. The regeneration of the Cheonggyecheon stream is connected to a city conducive for residential living as built by the residents; thus showing the possibility of sustainable urban policy. The paradigm is shifting to urban regeneration, i.e., regeneration of declining urban environment and activation of such regeneration.

5.2 Policy to Manage Development Without Considering the Environment

The semi-agricultural area of the 1990s was the hotbed of development without considering the environment. The side effect of development without considering the environment-as represented by standalone APT complex due to the easing of land use regulations-emerged as a social issue. To overcome such phenomenon of development without considering the environment, pre-planning and post-development were presented in the Fourth Comprehensive National Territory Plan; the Comprehensive Measures to Prevent Development without Considering the Environment were announced on May 30, 2000 to establish the system. The Kim Dae-jung Administration (February 25, 1998~February 24, 2003) enacted and proclaimed the Act on National Territory Plan and Use-which integrated the Urban Planning Act and National Territory Use Management Act-on February 4, 2002; thus, the land use management system was unified. This Act enacted the enforcement ordinance and sub-instructions in 2002 and enforced them on January 1, 2003. Consequently, the urban planning management technique could be applied to non-urban areas as well.

The Act on National Territory Plan and Use sets forth matters on the establishment and execution of the plan for the use, development, and preservation of national territory and seeks to enhance public welfare and improve citizens' quality of life. Such legal system's transition process means the conversion into an unified, integrated national territory space management system beyond the dichotomy of the national territory space management system, which classified national territory into urban and non-urban areas for the past 40 years.

Cities and rural areas were integrated and converted into a city-rural village complex urban management system, which became an important turning point in urban policy. The integrated management system of cities and rural villages helped take one step closer to sustainable cities. In this regard, the details and framework of the basic urban plans presenting what the future could hold.

5.3 Urban Reactivation Policies

At the time of Korea's liberation from Japanese colonial rule in 1945, earth and sand and water covered the river bed of the Cheonggyecheon stream, and shanty quarters were located along the stream. Thus, it was severely polluted because of sewage. Although there was a plan to dredge the Cheonggyecheon stream from Gwangtong Bridge to Yeongdo Bridge in 1949, it was suspended because of the Korean War in June 1950. Many refugees who came to Seoul to settle there after the Korean War settled along the Cheonggyecheon stream. They built shacks, half of which was floating on water and the other half erected on land. The stream was polluted more quickly owing to household sewage flowing from the shanty quarters.

The Cheonggyecheon stream was a typical slum area encompassing Korea's poor and dirty, which suffered from colonial rule and the Korean War in the mid-1950s; thus, the development of Seoul was not expected, leaving the stream as it was from the urban landscape standpoint. In those days when basic necessities were difficult to procure, the easiest and only method to solve the stream issue was to cover the Cheonggyecheon stream given Korea's economic situation.

The shacks located along the Cheonggyecheon stream were demolished, and modern shopping malls were built. The stream where earth and sand, waste, and sewage flowed was converted into an asphalt road. Many cars ran very quickly on the covered road and overpass. The Cheonggyecheon stream, which used to be one of the biggest sources of shame in Seoul, became the pride of Seoul, symbolizing modernization and industrialization. Meanwhile, many people who lived around the covered road of the Cheonggyecheon stream were forcefully relocated to Bongcheon-dong, Shinrim-dong, and Sanggye-dong; this also formed slums, which symbolized another type of poverty. Korea's valuable cultural assets such as Gwangtongbridge were damaged too.

Along the Cheonggyecheon stream 40 years after it was covered, tool stores, lighting stores, shoe stores, garment shopping mall, used book stores, and flea market were clustered. Nobody thought of the stream as the pride of Seoul anymore, however. Rather, it became synonymous to the most complex and noisy area, and it was thought of as damaging to Seoul's image. The huge concrete mass, the Cheonggyecheon overpass, was regarded as an ugly thing produced by the era of development, not as a symbol of modernization and industrialization. In 2003, the plan to uncover or open the Cheonggyecheon stream, which was covered for the past 40 years, was established by then Seoul Mayor Lee Myung-bak; the Cheonggyecheon stream regeneration project was completed in October 2005. It sought to remove the overpass and covering structures-which were eyesores of the city center-and develop a new attractive city center waterfront space. The project intended to recreate the city environment in the city center. The regeneration of the Cheonggyecheon stream brings about many changes in the surrounding areas adjacent to the Cheonggyecheon stream, which enlivens the city center environment of Seoul where the most number of people move around.

The Cheonggyecheon stream regeneration project's impacts on the urban policy paradigm change were huge, bringing about recognized change on cultural and historical resources that had been thought of as unimportant and greatly affecting public space creation as well. Consequently, various stream/river projects that were practically ignored by the local governments were re-reviewed; those projects offered an opportunity to upgrade the urban environment.

5.4 Urban Policies to Encourage People to Live in Cities

Beginning in 2000, Korea made citizens participate in the city policy establishment process and consequently made great efforts to develop a resident-oriented urban environment. Regardless of residents' participation being voluntary or civic organizations leading the participation, residents' participation plays a pivotal role in securing the plan's legitimacy. Such resident-led planning technique has developed into a project of creating a city conducive for residential living, which is a higher form of development.

In April 2005, the government decided to discover and support pilot projects to build a city conducive for residential living by improving the basic living base of villages and cities and environmental and cultural weaknesses. The pilot project was classified into a pilot village project and a pilot city project promoting specialized urban development. The pilot village project aimed at enhancing interest in the village and opportunities for education and learning by building the village with the participation of residents, small-scale village associations, and civic organizations. The pilot city project is intended to support the municipal/gun/gu's urban environmental reorganization project and is carried out with the participation of local governments and residents. The project is carried out by establishing the network of public research institutes, local colleges, research centers, and civic organizations.

The project of creating a city conducive for residential living is a project entailing the voluntary participation of its residents. The residents can build a village conducive for residential living by putting many things into practice.

Future city policies should be to the satisfaction of the residents so that they can feel happiness. Therefore, the project is a mode for developingan urban environment that is pursued by city policies and a policy direction to pursue sustainability.

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