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## 2020 Area-wide Urban Planning for the Capital Region

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The Ministry of Construction and Transportation, Seoul Metropolitan City, Incheon Metropolitan City and Gyeonggi-do have jointly established the Area-wide Urban Planning for the Capital Region aiming at restructuring the urban area at the area-wide level following adjustment of the greenbelt areas in the capital region. The plan presents long-term plans on functions of each individual city and area-wide urban facilities of the region, with the intent to propose directions to development of the capital region from a long-range perspective.

### Population and Spatial Structure

The plan suggests 27.4 million as maximum population of the region in the year 2020: Seoul 9.8 million, Incheon 3.1 million and Gyeonggi-do 14.5 million. This is to secure effectiveness of the plan by controlling and preventing excessive concentration of population in the region.

Under the planning, the current mono-centric Seoul-dependent spatial structure of the capital region is reformed in order to promote balanced development of the entire region and make each individual city in the region self-sufficient. To this end, Seoul plans to establish a cluster of the pivotal administrative function within the city while restructuring the urban space into a poly-centric area spreading the other functions to a number of central districts including the central business district of Seoul, Yongsan, Yeongdeungpo, Sangam, Yeongdong and

Cheongnyangri. Under this plan, Incheon will specialize in international exchange and information, and Suwon will be nurtured as hub of the southern capital region. Paju and Dongducheon will be developed to become a growth pole for inter-Korean cooperation while Pyeongtaek will grow to become a coastal logistics pole. Lastly, Namyangju and Icheon will be raised to be the center of environment-friendly living focusing on rural areas and leisure activities.

The backbone of the developmental axes within the capital region, which centers around the transportation axes within the region, are the Gyeongui · West-coastal Axis and Gyeongwon · Gyeongbu Axis south to north, and Gyeongin · Gyeongchun Axis and Suin · Yeongdong Axis east to west.

According to the plan, a total of eight areas including the Demilitarized Zone (DMZ) and Bukhan Mountain are designated as centers of green space to form the axis of green space in the region and will create a pleasant living environment. Areas between the eight centers where valuable green space is concentrated are linked in accordance with the axis, and then a south-north axis, the Mt. Gwangdeok and Mt. Seowon Axis, and four east-west axes including the DMZ and Mt. Gwangdeok Axis have been designated as primary axes of green space. Apart from this, the Han River and the west-coastal axis of vast tidal flats have been designated as the axis of green space for water conservation.

## Sectoral Plans

Depending on proximity to Seoul, distribution of central cities, natural topography and land use, the capital region is divided into five sub-regions: central, northern, southern, eastern and western, and directions to land use and maintenance of each individual sub-region have been suggested in the planning. After being assessed upon the natural environment, land with high conservation value is designated as conservation land, and will be managed as a conservation area. The remaining land is classified into urban land, land for future urban development and land for other uses, and managed in a planned manner. As for lands for future urban development, those within central cities are given priority for development, and development density will be differentiated depending on whether the land is situated in the urban center, urban outskirts or suburban areas in order to promote future development demand and actively encourage development that harmonizes with the surrounding landscape.

Under this planning, a public transportation-oriented efficient area-wide transportation system will be established to conform transportation to the poly-centric decentralized spatial structure. Furthermore, the plan intends to strengthen the linkage of transportation planning to land use by preferably developing land surrounding public transportation facilities and transportation nodes such as transit passenger stations and subway stations, which is called transit-oriented development (TOD). Here, incentives are granted and environment-friendly transportation facilities expanded to encourage development.

In addition, the plan will establish a comprehensive administrative system for area-wide transportation, and expand airports and port facilities to strengthen international trade in Northeast Asia. For the area-wide road network, the plan has conceptualized, considering related plans, several transportation axes - north-south, east-west, and circular - in order to support restructuring of the spatial structure closely connected to the developmental axis. For the area-wide railway network, the plan has strengthened the linkage of high-speed rails, arterial railways and area-wide railways to urban railways, aiming at public transportation-centered transportation network construction.

The plan will prepare measures to manage water quality for each individual water source including the Paldang Lake to facilitate area-wide water supply covering the entire capital region and enhance efficiency of the facilities. Also, it will encourage such areas as metropolitan cities, the neighboring areas and districts sharing the same water system to jointly install and use sewage disposal facilities since area-wide wastewater treatment is possible in these areas.

The plan will manage disasters at the regional level according to the degree of disaster risk and establish an area-wide disaster-information delivery system so that plans for disaster prevention can be prepared area-wide. Under the planning, guidelines to land use will be established after considering disaster prevention, and measures for disaster prevention will be provided that utilize open space and facilities. In addition, for area-wide

Development Density of Urban Land by District

Region	Central City	City · County	Development Density
Central Region	Core City(Seoul)	Seoul, Goyang, Euijeongbu, Guri, Hanam, Bucheon, Seongnam, Gwangmyeong & Gwacheon	250 persons/ha or less
West	Primary Pole(Incheon)	Incheon, Gimpo & Shiheong	Around 150 persons/ha
South	Primary Pole(Suwon) Secondary Pole (Pyeongtaek)	Suwon, Anyang, Euiwang, Gunpo, Ansan, Yongin, Osan, Hwaseong, Pyeongtaek & Anseong	Around 150 persons/ha
North	Secondary Pole (Paju & Dongducheon)	Paju, Yeoncheon, Dongducheon, Yangju & Pocheon	Around 150 persons/ha
East	Tertiary Pole (Namyangju & Icheon)	Gapyeong, Namyangju, Yangpyeong, Gwangju, Icheon & Yeosu	Around 100 persons/ha

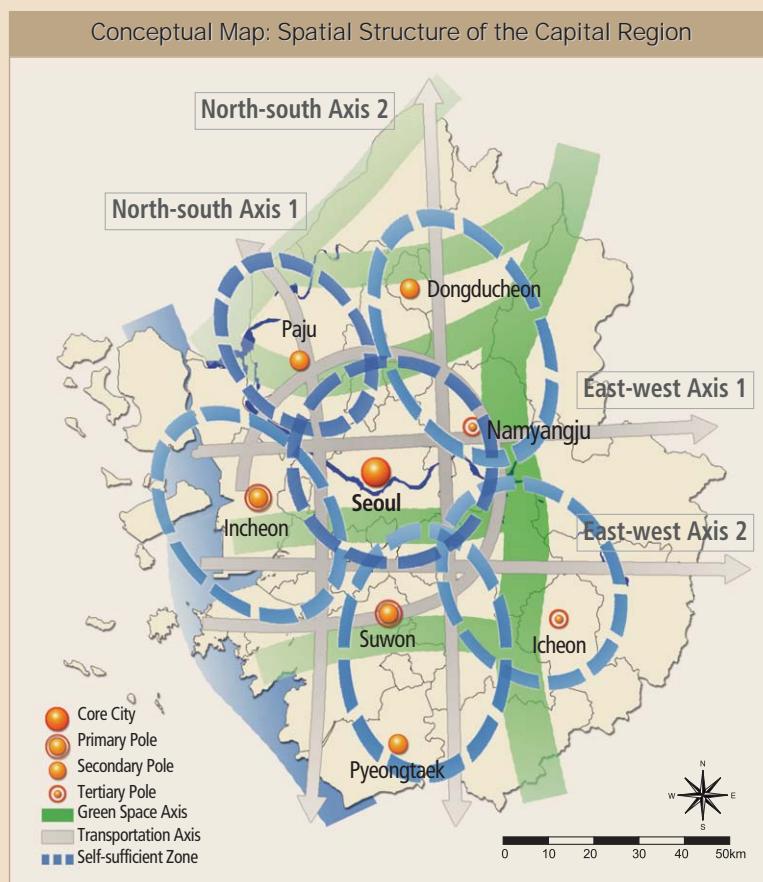
management of major rivers, streams and their branches, guidelines to water disaster prevention will be established, and an environment-friendly rainwater management system will be introduced.

For environmental conservation, the plan will construct an area-wide air management system, and provide measures for comprehensive air management by linking air control to land use and transportation planning while setting regional air quality criteria at the same time. For area-wide water management, the plan will construct a water management system which covers the drainage basin of a river. For the management of the Han River system, land use here is controlled in connection with the total amount of allowable pollution, and it is encouraged to create green space in the waterfront of major rivers.

### Readjustment of Greenbelt Areas

Of the 1,541km<sup>2</sup> greenbelt areas within the capital region, a total of 124km<sup>2</sup> has been recently excluded from greenbelt areas, or areas of restricted development. They are primarily collective settlements faced with complaints of inconvenience from the inhabitants, or areas proven to have low conservation value as a result of environmental assessment. Of this, a total of 678 collective settlements, or 52.7km<sup>2</sup> are currently being processed to be excluded from greenbelt areas by local governments concerned under urban management planning, with 41 collective settlements of 46.6km<sup>2</sup> having been designated as a site for public rental housing complexes.

A total of 25km<sup>2</sup> greenbelt areas which have little preservation value and with adjustable boundaries, are subject to public development in principle. This is intended to prevent private owners of the land from reaping development gains and develop the areas in a planned manner. The above areas are



divided into general areas subject to adjustment and areas for regional pending projects. In case there arises development demand by 2020, concerned cities and counties will establish specific development plans and the areas will be gradually excluded from greenbelt areas.

Greenbelt areas subject to boundary adjustment will be developed in an environment-friendly manner locating low-density buildings under the 'planning prior to development' principle, and by establishing an urban master plan and a district unit planning. In these areas, it is permissible to perform business involving public housing, social welfare and education · culture · leisure. Low-pollution industries and state-of-the-art technology, logistics centers and distribution complexes are also allowed in these areas.

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## Proposal for Promotion of the BESETO Transport Corridor\*

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### Construction of the Physical BESETO Corridor

Northeast Asia is a key region in the world in terms of flow of goods and people. The growth of trade between China and Japan, and between China and Korea has been phenomenal in recent decades. Some bilateral free trade agreements (FTAs) are under discussion between Northeast Asian countries, and the possibility of a tripartite FTA has been examined among leading think tanks in China, Japan and South Korea for several years. These movements are certain to increase the level of competition between companies and the degree of industrial specialization in the region. In addition, international tourism within Northeast Asia has recently surged. All this shows that the region has great potential of future development.

However, despite rapid explosion and high density of trans-national interactions in Northeast Asia, the transport infrastructure is not integrated across the borders, which results in lower transport efficiency. The transport market system remains imperfect and administrative interferences are still critical obstacles to economic operation in this region. Under this background, this region needs a common platform aimed at efficient transnational development of transportation infrastructure. A couple of proposals have been offered to realize the common platform, namely the BESETO Transport Corridor as follows, and here, the transport system in the region has been analyzed separately for freight and for passengers:

For freight transportation, it is better to use an intermodal transport system. In the BESETO Corridor, coastal shipping plays a vital role in cargo transport, and a highway network will cover the land part of the transport. Direct connection to highway at ports is thus desirable. Where traffic is dense, combined use of railways and rail ferries should be also considered as demonstrated in the case of the Trans-Bohai Bay route. In that case,

effective direct linkage of railways and shipping services is crucial. For both the transportation routes, improvement in intermodal connection at ports is essential.

Aviation is a more effective mode for passenger transport. In Northeast Asia, air travel is quite favored by modern time-conscious passengers especially because the cost of flights is equal to or slightly higher than those of other transportation modes. Above all, when flying, passengers can save one-third or half the time required to get to the urban core using other modes of transport. In this respect, reinforcement of the air transportation network in the region is significant.

### Realization of the Intermodal Transportation Network

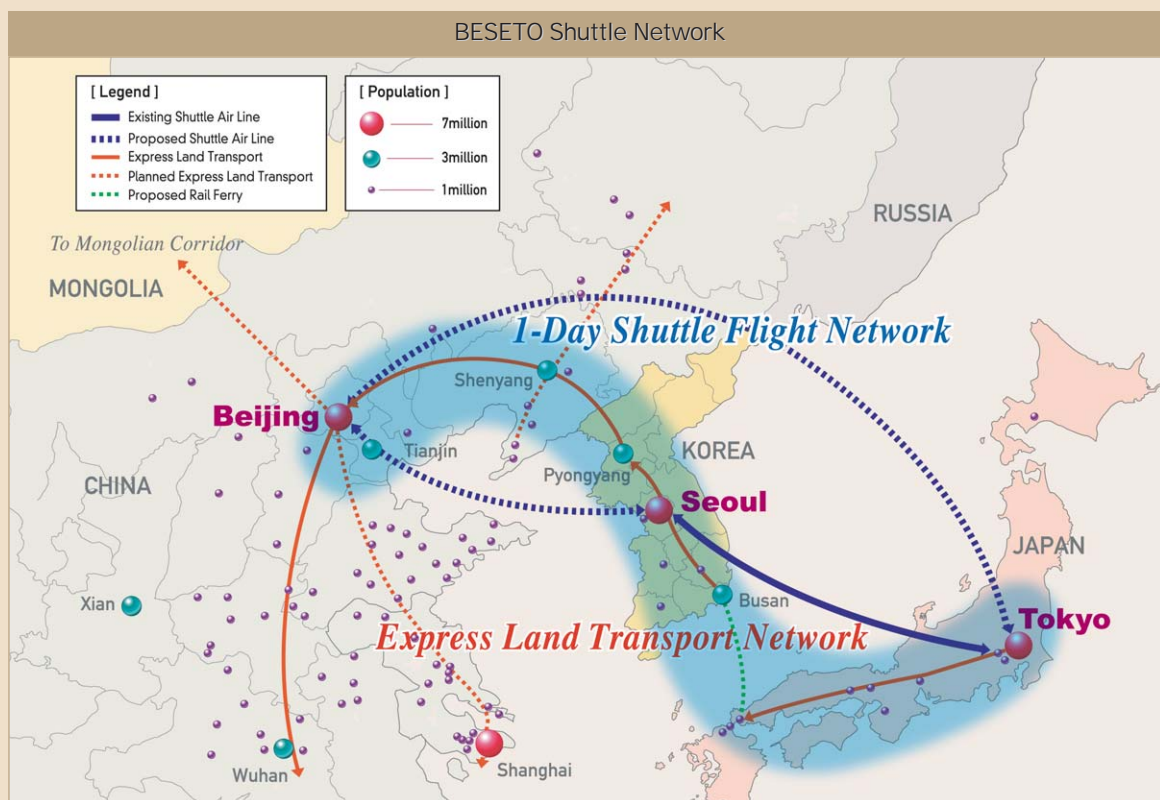
A total of 2.4 million travelers and 1.56 million TEU (twenty-foot equivalent units) of freight were exchanged between Seoul and Beijing, and a total of 4.15 million travelers and 1.23 TEU of freight between Seoul and Tokyo in 2005. The freight transfer between Seoul and Beijing recorded approximately 20% of an annual growth rate in the past 10 years and its future growth is predicted to continue. The number of air passengers, recording approximately 23% of an annual growth rate, is also expected to continuously increase in the future.

Given the blockage of land transport by North Korea and topographical difficulty, travelers of Korea, China and Japan depend mainly on air transportation. However, what is notable here is that ferry services account for 40% of the travels between Seoul and Beijing, and 15% between Seoul and Tokyo. Likewise, while most of the freight movement in the main line of the BESETO depends on maritime transportation, if freight traffic is shared through the Train-Ferry System (TFS) or the Road-Feeder System (RFS), transportation time can be reduced by 24~40%, and transportation costs can

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\* This proposal is the result of a collaborative study among the Institute of Spatial Planning and Regional Economy of China, the National Institute for Research Advancement of Japan and the Korea Research Institute for Human Settlements of Korea. BESETO stands for Beijing, Seoul and Tokyo.





also be reduced to as low as the cost of existing maritime transportation. Therefore, in order to maximize efficiency and potentials of transportation in the BESETO corridor, it is necessary to promote transportation mode share and intermodal transportation. In addition, this can be an alternative to effectively respond to the sharp increase in the volume of intra-regional trade in Northeast Asia that arises from explosive economic growth of China and changes in the circumstances regarding the intra-regional trade.

For example, the Korea-China Train Ferry has been under discussion for some time between China and Korea, and in order to materialize the agreed-upon train-ferry between Incheon and Yantai, it is necessary to secure an exclusive RO/RO vessel and improve the overall conditions of Incheon Harbor as soon as possible. Another example is the Busan-Fukuoka Train-Ferry line, and full operation of the line should be considered to link Japan to the main inland transportation system of China via Korea. In the long term, if multimodal transportation including the train-ferry is introduced in the BESETO trade

corridor, freights bound for Europe could be transported all the way to Europe via the Trans-China Railway (TCR) and the Trans-Siberia Railway (TSR).

### Reinforcement of Air Transportation Networks

In recent decades, the aviation market in Northeast Asia has drastically expanded. Now, millions of passengers use international flights among countries in the Northeast Asian region, among China, Korea and Japan, in particular. In 2005, about 2.4 million Japanese visited Korea and 1.7 million Koreans visited Japan. In the same year, 3.5 million visitors to China were Koreans, and Korea received 0.7 million Chinese visitors. Between China and Japan, 3.4 million Japanese visited China and 0.6 million Chinese went to Japan for a visit. Most of them preferred air travel to other transportation modes. In addition, taking into account the spikes in usage of peddlers between metropolitan cities of China, Korea and Japan along the BESETO corridor, strengthening aviation service networks in Northeast Asia is essential.

We present the following two suggestions as main goals to be sought to reinforce the air transportation network in Northeast Asia: expansion and strengthening of the so-called 'Northeast Asia Sky Corridor', and the introduction of the 'BESETO special pass/ lump visa.' Additionally, to strengthen

the air transport network, it is necessary to study the feasibility of an international jet network in Northeast Asia which will supplement the BESETO inter-capital and inter-metropolitan air shuttle networks.

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## Area-wide Tourism Development Plan for the Gaya Cultural Area

### Background and Current Status

The southeast inland of the Korean Peninsula, where the ancient Gaya Dynasty enjoyed its heyday, is rich in cultural and historical remains related to the dynasty. However, due to a lack of systematic maintenance, the heritages have remained almost unknown compared to those in other areas of the country. Accordingly, cultural tourism in the region remains inactive, hardly contributing to regional development. Therefore, though belated, it is necessary to explore and maintain these valuable historical heritages of the ancient Gaya Dynasty in this area to inherit and further develop the assets as well as publicize them. In addition, it is important to activate cultural tourism, an emerging crucial tool for regional development, by systematically maintaining the remains and by making the most of the resources.

The purpose of the study is to spark renewed discussion on the value of the culture and history of the Gaya Dynasty and its cultural heritages distributed in the southeast inland, and explore methods to utilize the culture and history as tourism resources. By so doing, the study intends to establish a tourism development plan to systematically build infrastructure of culture and tourism in the region. The spatial scope of the study is Dalseong of Daegu Metropolitan City, Goryeong and Seongju of Gyeongsangbuk-do, Hapcheon, Geochang, Changryeong, Sancheong and Hamyang of Gyeongsangdam-do, and Namwon and Jangsu of Jeollabuk-do with the land area totaling approximately 6,553km<sup>2</sup>, or 6.6% of the entire territory. The population of the area is around 634,000, or 1.3% of the entire population



of the nation, one of the most depopulated areas. While the ratio of tertiary industry to primary and secondary industry is high in the area, its financial independence is 20% or less except Dalseong, which marks the region as an underdeveloped area.

### Overview of the Gaya Cultural Area

The Gaya Dynasty was established in the early 1st century B.C. based on the iron culture, growing out of the Byeonghan confederacy of the Three-han period in the Nakdong River valley of southern Korea. In the early 4th century, neighboring Baekje and Shilla Dynasty began to develop into an ancient

kingdom. Unlike these dynasties, Gaya remained as two leagues of several countries: one centering around the Geumgwan Gaya in Gimhae, southern part of Gyeongsangnam-do, and the other, the Great Gaya, primarily in inland Goryeong. In the early 5th century, the Great Gaya greatly expanded its territory to the upper reaches of the Namgang River and the Geumgang River in the central part of the Korean Peninsula, and the Seomjin River valley. It went as far as giving its king the title, the Great-King. However, the Geumgwan Gaya was subjugated to Shilla in 532, and the entire Gaya including the Great Gaya was gradually absorbed to Shilla and vanished from history by 582.

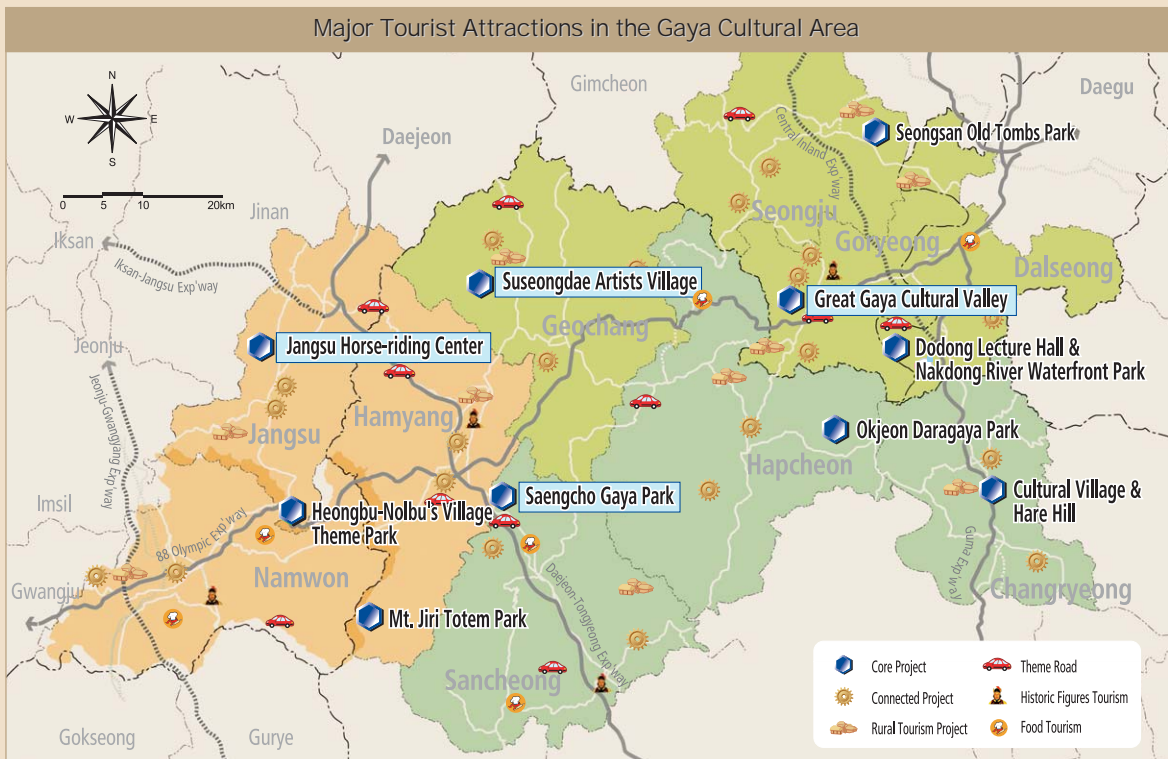
The Gaya culture is characterized by curved earthenware found in Goryeong and belief in life after death. Ancient tombs are being excavated in the region that show a custom of burying the living with the dead. The most typical remains of the Great Gaya are a total of 71 old tombs including the group of tombs in Jisandong, Goryeong, 19 mountain fortress walls, three historic sites, one mud fortification and one estimated site of a royal palace.

## Strategies for Development

The vision formulated for tourism development of the Gaya cultural area is 'Realization of a new cultural tourism area through renewed discussion on the Gaya culture'. The strategies for materializing the vision are as follows: to excavate, restore, maintain and then turn the Gaya historic remains into tourism resources-this is intended to bring renewed attention to the Gaya cultural assets spread throughout the area; and to explore existing various resources of the region other than the Gaya cultural assets and newly develop tourism resources by taking advantage of the resources, or promote better use of existing tourism resources.

The plan has divided the Gaya cultural area into the northern, southern and western region of the Great Gaya in order to develop the region in an effective manner. This is due to the fact that the region is situated in the southern inland and horizontally long with major expressways passing through the region east-west and north-south across four local governments.

Then, the plan has explored and presented a total of 46 projects for the development. Some examples



of the projects are as follows: maintenance of cultural and historical assets including excavation and restoration of the Gaya heritages, historical and cultural tourism resource development focusing on those already maintained, general tourism development centering around existing resources, and supporting projects including road construction. In particular, the plan is not only for a tourism development, but taking itself one step further, includes investigation and research for maintenance of the cultural remains. The reason is that scholarly investigation and excavation on the Gaya remains spread throughout the region have not been sufficient so far due to a variety of reasons.

Most of all, the plan is characterized by an area-wide tourism development planning, and for now, it

is a non-statutory local plan with the nature of an administrative plan, but without laws and institutions prepared for the plan. Therefore, in order to effectively promote projects suggested in the development plan, it is necessary to prepare a legal basis for promoting such projects as an Area-wide Tourism Development project or a Special Zone Development project led by the central government. Fortunately, in relation to tourism development of the Gaya cultural area, examination of designating the region as a special zone is currently in progress at the central government level.

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## Main Findings of the Korean Housing Survey

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### Overview of the Survey

The Housing Survey has been carried out for the first time in Korea to accommodate the increase in the demand for housing-related statistics required to establish various kinds of housing policies. The survey was conducted by KRIHS at the request of the Ministry of Construction and Transportation (MOCT). It was carried out under the Housing Act among a total of 30 thousand households across the nation using in-depth interviews to identify housing conditions of the nation.

The survey collected and analyzed general data on housing including current status of housing such as household characteristics, housing environment and conditions of the house, and past behaviors related to housing of the interviewees and their plans to move in the future as well: those that have been excluded from the existing Census. It is significant that through the survey, we could obtain various kinds of basic data that exactly show the current housing status of the nation. The data can be utilized as major statistics when establishing housing welfare policies such as housing supply plans, countermeasures for households failing to meet the minimum housing requirements

and rental housing policies.

Following this survey, the MOCT plans to conduct the housing survey on a yearly basis and collect statistics and data on housing of the nation; the survey is expected to help identify change in housing in time-series data and can be utilized as crucial data for systematically analyzing policy effects. While the 2006 survey was on overall aspects of housing, the 2007 survey will specialize in elderly households with the intent to set up policies on housing welfare for the elderly in preparation for the advancing Ageing Society.

### Major Results

#### *Household Characteristics and Economic Capacity*

According to the results, nationwide average monthly income is approximately 2.2million KW with average monthly cost of living 1.33million KW, approximately 60% of the average monthly income. The nationwide average value of housing assets is approximately 120million KW with that of the capital region standing at 174.92million KW,



Average Monthly Income & Cost of Living			
₩ 10,000			
Category	Average Monthly Income	Average Monthly Cost of Living	Average Monthly Housing Expenses*
Nation	219.89	132.55	18.70
Region	Capital Region	253.00	145.97
	Metropolitan Cities	206.33	135.35
	Provincial Areas	179.67	111.45
Income Level	Low-income	80.84	67.58
	Middle-income	233.84	144.48
	High-income	480.58	243.11

\* Housing expenses means heating costs, electricity fees, water supply and drainage, cooking fuels, ordinary housing maintenance costs, general management costs and fire insurance. Rent and irregular maintenance costs such as replacement of heating facilities are not included.

metropolitan cities 79.06million KW, and provinces 59.86million KW. As income level increases, the housing assets tend to jump, and average housing assets of high-income households are 275.35million KW, around 4.9 times higher than those of low-income households.

### *Housing and Housing Environment*

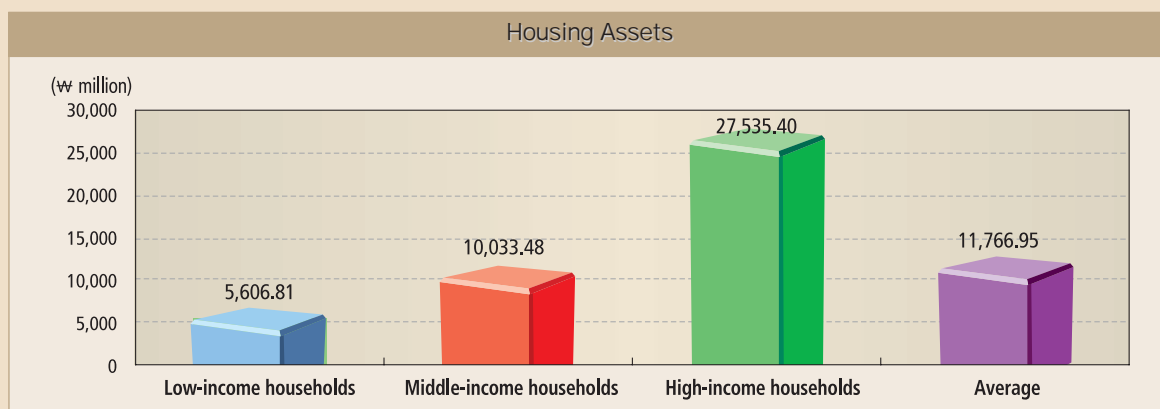
The survey shows that in general, apartments are on the rise due to their convenience and high efficiency in management. In every region, as the income level is high, people tend to live in apartments rather than in single-detached houses. It takes young families 8.07 years on average to buy their first home: 8.60 years in metropolitan cities which is higher than in the capital region, or 7.90 years and in provincial areas, or 7.98 years.

The current nationwide average living area per

household is 67.33m<sup>2</sup>; that of provincial areas is 69.46m<sup>2</sup> with that in the capital region 66.99m<sup>2</sup> and metropolitan cities 64.47m<sup>2</sup>. The comparatively low price of land and housing in provincial areas appears to affect the living area per household. The previous living area of a household is 53.10m<sup>2</sup> on average with that of the house a household wishes to move to in the future is 80.48m<sup>2</sup>, indicating the living area gets bigger in chronological order.

### *Plans for Moving and Housing Purchase*

Regarding the plan to move within the next 2 years and the considerations, more households had a plan to move in the capital region than in the other regions. Upon moving, people consider the size of the house most followed by housing price and transportation. The survey results show that the



capital region puts higher value on the size and price of housing compared to the other regions.

## Housing Indicators

A survey has been carried out on a total of 12 items to find out how satisfied people are with their housing. The results show that overall, people are very satisfied; that is, on a four-point scale, the grade is close to three points on average. According to the results, satisfaction with ‘community ties’ is high while people have indicated that ‘convenience in the use of cultural facilities’ was least satisfying. Provincial areas showed the highest housing satisfaction while that of the capital region was relatively low.

Price to Income Ratio (PIR) is used to measure housing affordability; roughly speaking, it indicates the current market value of a housing unit to the

total annual income of a household. Currently, it requires 4.2 times the total annual income of a household to purchase a house in the nation. In the capital region, the required amount is 5.7 times, 4.0 times for metropolitan cities and 3.3 times for provincial areas. Rent to Income Ratio (RIR) indicates housing cost burden of renters, representing the ratio of rent to monthly income. Currently, it is 18.7% nationwide, compared to the capital region’s 19.9%, 18.5% for metropolitan cities and 17.8% for provincial. This implies that the housing cost burden of the renters in the capital region is comparatively high.

Loan To Value ratio (LTV) is an indicator used to identify the role of housing finance upon housing purchase; the greater the value, the higher the amount of a loan. The national average is currently 36.5% and that of provincial areas (39.3%) is higher than that of the capital region

Living Area per Household				
				m <sup>2</sup>
Category		Previous Living Area (Average)	Current Living Area (Average)	Future Living Area (Wished) (Average)
Nation		53.10	67.33	80.48
Region	Capital Region	56.00	66.99	79.44
	Metropolitan Cities	52.49	64.47	83.26
	Provincial Areas	49.39	69.46	80.94
Income	Low-income	45.61	57.67	66.14
	Middle-income	53.61	68.38	78.30
	High-income	67.84	85.30	98.88

Considerations upon Moving								
								%
Category	Housing Price	Housing Size	Housing Type	Transportation	Inner House	Environment	Education	Others*
Capital Region	16.56	16.80	6.81	12.11	3.59	10.60	11.04	22.49
Metropolitan Cities	14.58	16.19	9.57	13.25	6.85	7.99	12.11	19.45
Provincial Areas	16.01	15.63	10.15	10.32	7.70	7.79	11.86	20.54
National Average	16.09	16.42	8.06	11.91	5.10	9.50	11.41	21.51

\* Others include the number and size of the rooms, maintenance costs, parking, parks and green space and also expectations on housing price increase.

Housing Satisfaction*					
Category	Capital Region	Metropolitan Cities	Provincial Areas	National Average	Dissatisfaction Ratio** (%)
Convenience Facilities	2.73	2.77	2.51	2.67	35.42
Hospitals	2.71	2.78	2.49	2.66	35.48
Public Facilities	2.79	2.82	2.54	2.72	32.05
Cultural Facilities	2.54	2.49	2.22	2.42	50.89
Public Transportation	2.74	2.72	2.53	2.67	36.08
Parking	2.66	2.63	2.79	2.70	34.41
Commuting Hours	2.86	2.86	2.87	2.86	22.15
Security	2.72	2.81	2.90	2.80	25.31
Education	2.66	2.74	2.52	2.63	35.97
Community Ties	2.85	2.93	3.10	2.95	18.61
Cleanness	2.88	2.87	2.97	2.90	18.93
Overall Housing Environment	2.84	2.87	2.89	2.86	20.54
Ratio of Dissatisfaction	21.24	20.32	19.65	20.54	-

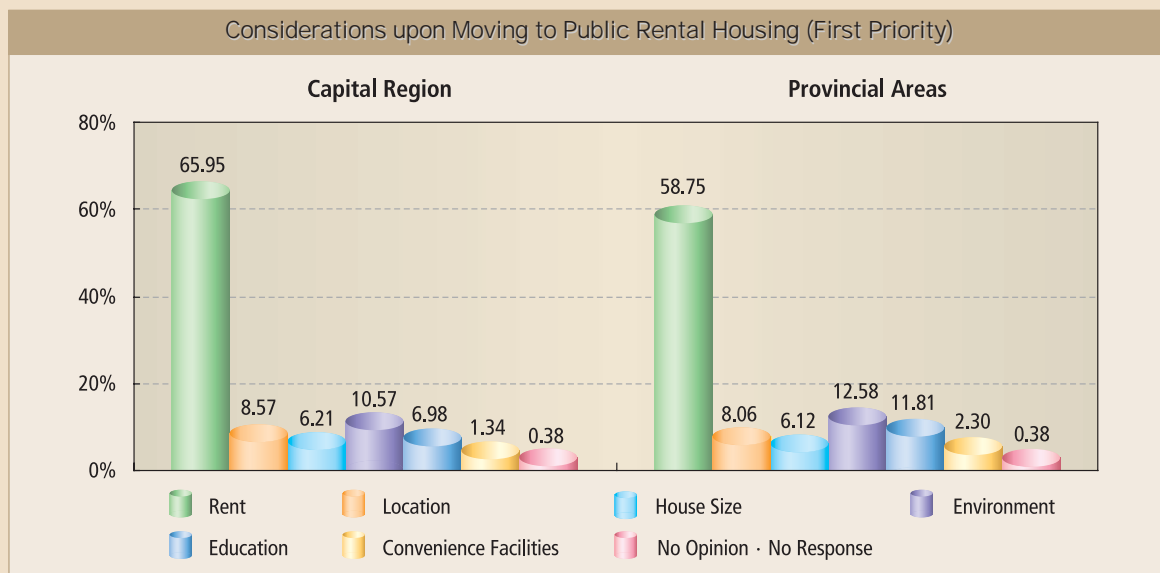
\* Housing satisfaction has been measured on a scale of 1 to 4 with 4 being very satisfied and 1 being very dissatisfied.

\*\* Dissatisfaction for calculating the ratio of dissatisfaction includes both being very dissatisfied and being dissatisfied.

(35.7%) and metropolitan cities (34.5%). The survey results show that people have lived in their current house for an average of 7.66 years nationwide. In the capital region, they have lived 5.33 years, 7.20 years in metropolitan cities and 11.34 years in provincial areas. The period people live in a house is much shorter in the capital region than that of the rest of the nation, implying that

moving is frequent and their housing is unstable in the capital region.

The ratio of moving due to involuntary reasons such as a high rent or at the owner's request is 10.31% of the entire moving nationwide. In metropolitan cities, the ratio is 14.33% followed by the capital region of 10.11% and provincial areas of 7.86%.



Opinion on the Housing Mixing Type					
				%	
For the Mix (86.48)				Against the Mix	No Opinion · No Response
Separating a complex of rental housing from that of houses for sale	Mixing rental housing with houses for sale within the same complex after grouping each of them together	Mixing a couple of buildings of rental housing with a couple of buildings of houses for sale within the same complex	Mixing rental housing with houses for sale within the same building		
34.89	17.20	20.89	13.50	12.56	0.96

### Public Rental Housing\*

Of the households without home ownership, 41.82% responded that they would move to public rental housing, which is higher than those who said they would not, or 35.91%. 22.27% of them had no opinion about the matter. According to the survey, people's

priority considerations upon moving in a house are rent, surrounding environment and location. Lastly, the survey shows that an overwhelming 86.48% support for the mix of rental housing and houses for sale.

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## Land Use Regulations Information System (LURIS) Development

Regarding use and development of land, currently, a total of 218 zoning areas and districts have been designated under approximately 72 Acts in Korea. This means average 5 to 6 zoning areas and districts are designated for one parcel of land at a time, and thus, one parcel of land is under multiple land regulations. Furthermore, the regulations are overlapping with each other in a complicated manner. As a result, regulations on activities related to use and development of land are being defined in different ways depending on the Act concerned. What is worse, the regulations are not systematic and difficult to understand. In other words, it is difficult for the general public to decide on what they can do with their land since their land is under multiple land use regulations as a consequence of multiple zoning areas and districts having been designated for their land.

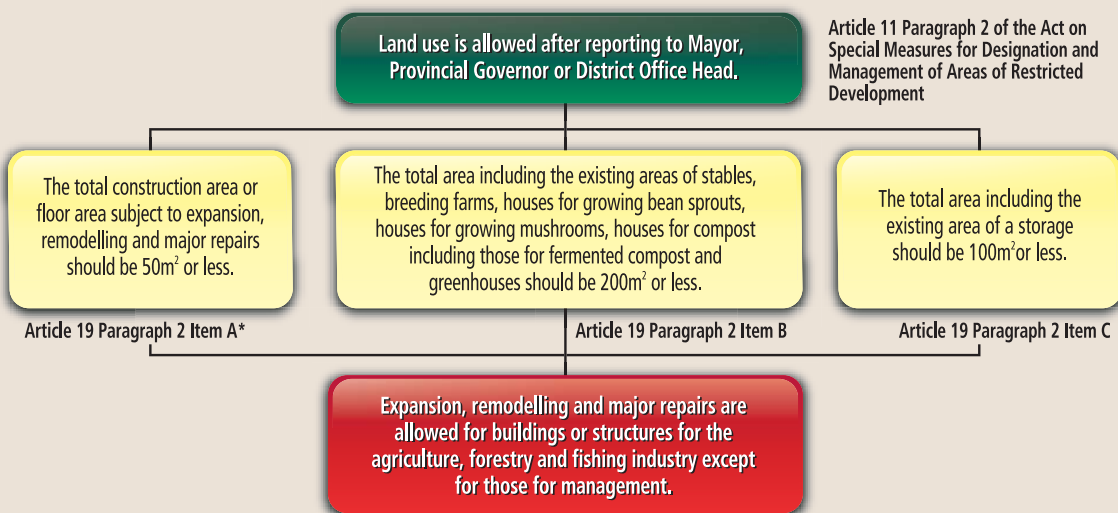
Apart from this, land-related laws are complex

and diversified by nature. Further, they are frequently enacted and then revised. Besides, what people complain about land laws are various. It is true that, due to all these reasons, the general public fail to receive a proper level of services in terms of land use regulations. In short, the level of services provided to the general public in relation to land use regulations remains low in Korea. Accordingly, in order to enhance public services regarding land use, it is necessary and urgent to explore measures to provide people with information on land use regulations more easily and more conveniently. In this context, the Land Use Regulations Information System (LURIS) has been established in order to construct a legal database on land use and thus allow public workers and the general public to have easy and convenient access to information on land use regulations.

\* Public rental housing refers to every type of rental housing built through budget support or the National Housing Fund, or with the supply of public housing land.



### Structural Map of Land Use Regulations and Delivery of Services



#### ► Land Use Allowed

Type of Land Use	Conditions
Expansion, remodelling and major repairs of buildings or structures for the agriculture, forestry and fishing industry except for those for management	<ul style="list-style-type: none"> <li>Reporting is compulsory to Mayor, Provincial Governor or District Office Head.</li> <li>The total construction area or floor area subject to expansion, remodelling and major repairs is 50m<sup>2</sup> or less.</li> </ul>
	<ul style="list-style-type: none"> <li>Reporting is compulsory to Mayor, Provincial Governor or District Office Head.</li> <li>The total area including the existing areas of stables, breeding farms, houses for growing bean sprouts, houses for growing mushrooms, houses for compost including those for fermented compost and greenhouses is 200m<sup>2</sup> or less.</li> </ul>
	<ul style="list-style-type: none"> <li>Reporting is compulsory to Mayor, Provincial Governor or District Office Head.</li> <li>The total area including the existing area of a storage is 100m<sup>2</sup> or less.</li> </ul>

\* The Enforcement Act on Areas of Restricted Development

## Directions to Development

Development of the LURIS has been promoted taking into consideration the following three factors: users, operators and methods to provide the information. To be specific, the target users are a variety of unknown people: the general public and public workers involved in land use regulations. The target operators are those in charge of each individual Act concerned and those in charge at the local government level, and are characterized by the fact that their workload is too much. The information to be provided through the system is characterized by overlap among different regulations and linkage to each other due to the fact that a variety of ministries,

departments and local governments are involved. Reflecting these issues, the directions towards development of the system have been set as follows: 'providing easy information through the Internet in order to allow multiple people to access information that can be easily understood'.

## System Development

The task of establishing the LURIS is roughly divided into two areas: system development and database construction. Firstly, major considerations for development of the system are flexibility and application. This is due to the fact that information provided through the system should be consistently

expanded upon and increased in quality. Under this principle, the system is composed of a legal knowledge base, an application server, a web server and a web browser.

The legal knowledge base physically stores a knowledge base and a legal database. The information on zoning areas and districts, and texts of regulations from the Ministry of Legislation, which are excluded from the system, are still provided through the system by linking it to the Land Management Information System and the Comprehensive Legal Information Service System of the Ministry of Legislation respectively. The application server is composed of the following three sectors: a geospatial information sector providing current status of parcel boundaries and designation of zoning areas and districts; a data processing and management sector for inquiries and handling of text-based information such as information on land use restrictions and guidelines to regulations; and an inferring engine sector for knowledge base inference.

The geospatial information sector includes functions for map services and data provision. The data processing and management sector is composed of a data extraction function for providing information on land use restrictions, a code management function and an information management function for managing data and records. The inferring engine is to extract regulations concerned from a knowledge base and, by applying these to information on land use restrictions, extract information on regulations. The web server converts information so that users can access the information provided by the application server through the web browser. The web browser is a direct medium to provide users with information, and in the web application system, performs the role of delivering guidelines to regulations and services on land use regulations and legal information.

The system collects, processes and provides information through a single system. The system is centralized, making it easy to maintain and manage data. However, too much traffic to the system may significantly influence the processing speed and even cause the system to crash. In order to minimize these problems, duplicate servers have been introduced. The database provided through the LURIS is either information on zoning areas and districts designated by parcel, or information on statutes setting land use restrictions. The former is already available through the Korea Land Information System (KLIS), so the

LURIS provides the information by linking itself to the KLIS. In order to explain land use stipulated by law, a knowledge base has been constructed.

The knowledge base is to explain regulations drawn by utilizing an existing relational database. In the system are stored regulations to infer restrictions applied according to zoning areas and districts designation. However, the regulations are enormously varied and extensive; therefore, one small-scale knowledge base has been created for each regulation, and these small-scale knowledge bases are serviced while inter-linked with each other. Methods to explain the knowledge base include a rule-based method, a semantic net method and a frame method, to name a few. Of them, the first method functions to explain knowledge in the form of IF and THEN, and is called a regulation-creating method. Since the LURIS should explain complex relations between various types of legal information, it has been constructed by means of a rule-based method for knowledge explanation. The reason is that the method can explain knowledge in a simple manner, and easy to maintain and manage.

### **Services Provision**

The database constructed this way is named a Structural Map of Land Use Regulations, and based on the database, the information is provided through the Internet. For example, a Structural Map of Land Use Regulations can be generated based on certain statutes, and according to the rule-based method to explain knowledge, the stipulations can be expressed as illustrated in the figure on page 13.

The database and the system were constructed throughout the year 2006 and the service began in January 2007. As of August 2007, eight months after the beginning of the service, approximately 1.15 million users accessed the system, with approximately eight thousand people visiting the web-site daily on average. In addition, user satisfaction is greater than 85%, satisfactorily meeting people's need to obtain easy information on land use regulations. The system is the first ever in the nation to explain and provide complex legal information by means of a database, and it is suggested that measures be continuously presented to provide more advanced services in the future.

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## International Cooperation

### GIS Korea 2007

The GIS Korea 2007, jointly organized by KRIHS and the Korea Land Corporation, and hosted by the Ministry of Construction and Transportation, was successfully held from June 13 through June 15 at the AT Center, Seoul. With the intent to provide a venue for sharing views and opinions, and information on the GIS to organizations and enterprises involved in the GIS as well as the general public and professionals, the event began with the Seminar on 'National GIS Policy in the Future'. The event was followed by the Competitive Exhibition of Innovation with the participation of public agencies and students, along with presentations of new technologies by private corporations and a conference jointly held by local GIS-related institutes.



A scene from the GIS Competitive Exhibition of Innovation for the public sector

### Int'l Seminar on Public Agency Relocation

KRIHS held the International Seminar on 'Public Agency Relocation and Regional Development' on July 18 at the Chosun Hotel, Seoul, with overseas experts in the area from the U.K., France, Sweden and Japan, public workers from the central and local governments, and other professionals from relevant institutions and the academic circle participating. The event was held under the sponsorship of the Presidential Commission on Balanced National Development and the

Ministry of Construction and Transportation along with two state-run enterprises. The seminar was organized with a view to learn experiences of government sector relocation to localities in advanced countries. Also, it was intended to provide a venue to benchmark those countries' public-sector-oriented innovative cluster formulations, so that the experiences can be shared for planning public agency relocation outside the capital region in Korea.

### Training Program for Foreign Officials

KRIHS held a training program, titled, 'Urban and Regional Development Policy' from August 21 to September 5, and provided professional lectures covering various fields of territorial and urban development for public officials from eleven developing countries around the world: Nepal, Congo, Ethiopia, Jordan, Egypt, Cambodia, Philippines, Haiti, Tajikistan, Uzbekistan and Bangladesh. The program is organized by KRIHS on a yearly basis with the intent to share Korea's experiences in territorial development over the past half century with developing countries of the world.

The topics of the lectures at this year's program included Korea's transportation infrastructure policies and housing provision for low-income households in Korea. Actively participating in the program, the officials had opportunities to learn a range of Korea's efforts to bring prosperity to the nation through territorial development.



## NEWS & ANNOUNCEMENTS

**KRIHS and the Ministry of Construction and Transportation** signed an agreement to create a Livable City Making Support Council on July 5 at the Seoul KyoYuk MunHwa HoeKwan, along with seven organizations including the Urban Action Network and Local Sustainability Alliance of Korea. The council has been established with the intent to encourage concerted efforts by the government, research institutes, relevant academic societies and NGOs to facilitate Livable City Making policy promotion and support early settlement. The event provided a venue for collecting wisdom regarding the future role of the council with professionals at home and abroad delivering special lectures and working-level officials from organizations involved participating in in-depth discussions following the lectures.

**KRIHS inaugurated the Road Policy Research Center** on July 13, with the Vice Minister of Construction and Transportation and senior government officials in the relevant fields along with experts in the related fields participating in the opening ceremony. Aiming at exploring future-oriented road policies, the center is intended to devise systematic and comprehensive measures for road maintenance by collecting road policy-related data and developing major policies. In addition, the center will play its due role in strengthening the network between related research institutes,

contributing to maximizing the synergistic effect of the research outcome.

**The Urban Innovation Center of KRIHS won first prize** among the six final entries of the Innovation Competitive Exhibition held on July 27 at the Seoul KyoYuk MunHwa HoeKwan. The event was organized by the National Research Council for Economics, Humanities and Social Sciences (NRCEHSS). Titled 'New Attempt, Closer to Customers', the winning entry was selected as the best practice of innovation among those of research institutes under the NRCEHSS. It will contend with other qualifiers from the public sector for the best prize in the final competition.

**The KRIHS-affiliated Architecture & Urban Research Institute opened** on August 17, as the country's first government-sponsored research institute in the architecture and urban-related field. Many people in the architecture and urban-related field including the Chair of the Presidential Committee on Architectural Culture & Construction Technology and Construction and Transportation Minister participated in the opening ceremony. They celebrated the birth of the institute, the first of its kind in the country, and reaffirmed the will to create a new generation of architectural and urban space in the nation.

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*KRIHS seeks to improve knowledge and understanding of the conditions and problems of the nation's resources and their interactions with people, to assist the government in formulating long-range development plans and make policy recommendations on related matters, to collaborate with the international research community in solving theoretical and practical problems concerning human settlement issues and planning, and to provide research expertise and consulting services along with training programs for foreign governments and institutions.*

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