Housing and Urban Informatization of KNHC
GIS Application in Urban Development Process

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1. Vision and Strategies of Housing and Urban Informatization

1.1 Vision and Strategies

Our VISION
Management Strategy

VISION of Housing and Urban Informatization

Strategies for Housing and Urban Informatization

Strategic Subjects

Promotion Direction

The Top Level of U-Housing and Urban Information HUB

Innovation of value creation task
Leading of housing and urban policies
Development services

Construction of the integrated housing and urban information
Realization of advanced housing information
Building of the housing and urban information organization
Support for the national housing and urban information

Urban development
Base for realizing future-type cities
Policies of public relations
Housing construction
Infrastructure of integrated housing and urban informatization
Inner innovation for value creation

1.2 Objective Image
1. Vision and Strategies of Housing and Urban Informatization

1.3 Phases of Implementation

1st Step (2004~2006)
- Geo-Spatial Information System
- Planning Support System
- Construction and operation of JUGIS
- Support for governmental policies
- Business competitiveness improvement and value creation
- Service improvement

2nd Step (2007~2008)
- Development of new task system
- Expansion of the existing system
- Construction of Housing and Urban Geographic Information network
- Revision of policies

3rd Step (2009~2010)
- Maintenance of system
- Improvement of information infrastructure
- Realization of Housing and Urban Information HUB
- Leading of housing and urban informatization
- Establishment of Housing and Urban Information

3rd Step (2010~)
- Trimming of system
- Construction of global re-molding support system
- Leading of housing information
- Improved position of KNHC
- Leading of quick and exact policy decision making

2. JUGIS I

2.1 Configuration of the System

Planning Support System
- Land Survey Support System
- Development Planning Support System
- Urban Planning Support System
- GIS-Spatial Information Utilization System
- Internet GIS Service

JUGIS DD
- KNHC's data
- Public organizations' data

- National GIS
- Topography
- Analysis of population
- Integration of 40 types of data from 10 organizations
- Analysis of growth potential
- Analysis of suitability

Service of spatial data (text, map, image, statistics, etc.)
2. JUGIS I

2.2 Geo-Spatial Information Utilization System

Satellite image service
- Satellite image with high-resolution (QuickBird)
- SPOT satellite image
- LANDSAT satellite image

Three-dimensional map
- Three-dimensional topography

Base map service
- Topographic map
- Calculated map
- Urban management planning map

Thematic map service
- Land data (KLIQ)
- Environment/agriculture data
- Land-use regulation data

Statistical service
- Housing and urban statistics
- Urban planning statistics
- Yearbook of Housing and Urban statistics

Project site information service
- General information
- Progress status
- Related licenses

Survey on public regulations
 Survey on natural environment
2. JUGIS I
2.2 Geo-Spatial Information Utilization System

2. JUGIS I
2.3 Planning Support System

Structure of the system

- Land Survey Support System
  - Potential development areas analysis
  - Proposed site analysis

- Development Planning Support System
  - Drawing up land use planning map
  - Feasibility analysis

- Urban Planning Support System
  - Housing & land needs analysis
  - Growth potentially analysis
  - Land suitability simulation

Application Data
- Topographic/Cadastral maps
- Infrastructure maps
- Geostatistics property data
- Found site data
2. JUGIS I

2.4 Application in the Process of New Town Development

Institutions of New Town Development

1. Related Regulation

   the Act of Housing Site Development Promotion

2. Objectives

   The development and supply of housing sites necessary to construct houses for solving the problem of site shortage in urban areas are:
   - To contribute to improving the national housing stability and welfare
   - To expand the urban infrastructure including roads, train, etc.
   - To induce the balanced national development with development profit reinvested to the public sector
   - To prevent the speculation in real estate and encourage the stability of land price with the large development of public housing land
2. JUGIS I

2.4 Application in the Process of New Town Development

Procedure of new town development:

- Establishment of the new town development policy
- Survey of the planned land (analysis of developable land) (analysis of propertiability) (analysis of suitable land)
- Proposal of the planned land
- Designation of the planned distinct area by public developer

Planning:

- Establishment of land development plan
- Application of the plan amendment and issue of approval
- Establishment of land development project
- Application of project approval and issue of its approval

Execution:

- Construction work
- Construction completion
- Project completion
- Site management

Potential Development Areas Analysis

Preparation:
- Scope definition and data preparation

Analysis:
- Identification of developable site boundary

Completion:
- Confirmation and search of analysis result

Reporting:
2. JUGIS I

2.4 Application in the Process of New Town Development

Proposed Site Analysis

- Preparation
  - Scope determination
  - Index establishment
- Drawing of proposed land boundary
- Analysis on each of proposed sites
- Confirmation Result
- Reporting

![Proposed Site Analysis Image]

2. JUGIS I

2.4 Application in the Process of New Town Development

Drawing up Landuse Planning Map

- Preparation
  - Selection of planned land
- Drawing
  - Drawing tool
- Confirmation of land use plan
- Making of
  - Land use plan
  - Housing plan table
- Reporting

![Drawing up Landuse Planning Map Image]
2. JUGIS I
2.4 Application in the Process of New Town Development

Feasibility analysis

3. JUGIS II
3.1 Structure of the System
3. JUGIS II

3.2 Main Contents

- Broad-Area Redevelopment Project Support System
  - Analysis on the proposed sites and infrastructure cost
  - Simulation of sharing urban infrastructure cost

- Local Heating Facilities Management System
  - Management of facilities and houses, early detection and treatment support of disorder, etc.

- Support System of Purchased Rental / Rental Housing Information
  - Search and query of applied buildings, support to occupants and housing management

- Facilities Spatial Information System
  - Support of facilities management, establishment of the underground facilities DB, and its management guideline

- [사업후보지분석]

- [열배관 시설물 관리]

- [입추자 및 주택관리]

- [시설물도면 DB구축]
3. JUGIS II

3.3 Application in Urban Redevelopment Process

Institution of Urban Redevelopment

1. Related Regulation
   the Special Act for Urban Redevelopment Facilitation Project

2. Objectives
   The institution to support urban-redevelopment facilitation projects for the purpose of improving residential environment, extending infrastructure sufficiently and restoring the urban functions for urban deteriorated areas
   - To improve residential environment through infrastructure construction at broad urban deteriorated areas
   - To expand housing supply with the modified construction regulations
   - To prevent excessive individual profit through collecting development profit

3. JUGIS II

3.3 Application in Urban Redevelopment Process

Procedures of Urban Redevelopment Facilitation Projects

- Documentation for the application
- Application for district designation
- Deliberation by the related committees
- Designation and notice

- Establishment of plans
- Application for plans' determination
- Deliberation by the committee of urban redevelopment
- Determination and notice

- Construction work
- Construction completion
- Site management

- Project completion
3. JUGIS II

3.3 Application in Urban Redevelopment Process

Outline on The Urban Broad-Area Redevelopment Support System

- The system supports the scientific and efficient establishment of urban redevelopment projects through analyzing various spatial informations:
  - To analyze the proposed sites
  - To support the analysis of feasibility
  - To simulate the share of infrastructure construction cost
  - To support the policy of urban redevelopment

Direction

- To use the basic data including national map, control map, etc.
- To construct the practice application based on Web
- To improve feasibility with national spatial analysis
- To use GIS data on the planned districts of urban redevelopment and the district plans
- To use know-how knowledge of urban experts
- To predict areas requiring urban redevelopment in the future

3. JUGIS II

3.3 Application in Urban Redevelopment Process

Configuration of the Broad Area Improvement Support System
3. JUGIS II

3.3 Application in Urban Redevelopment Process

Show of The Urban Broad-Area Redevelopment Support System

4. Direction of Future Informatization

Positioning as the World’s Best Housing and Urban Information Organization

- Improvement of task execution efficiency through scientific analysis
- Improvement in business competitiveness through housing and urban informatization

- Support to governmental housing and urban policies
  - And search for new informationization tasks

- Improvement of housing and urban information service satisfaction
  - Establishment of housing and urban information service
  - Comprehensive housing and urban information service

Information infrastructure of future city
- Customized service
  - Support to national housing and urban information
  - Support to national housing and urban information

Construction of integrated housing and urban information network