해외출장복명서

기　간:　2014. 4. 28~2014. 5. 1

출장지:　인도네시아 자카르타

출장자:　김태환 국토관리·도시연구본부장

국토연구원 연구본부명

Ⅰ. 출장개요

1. 출 장 지: 인도네시아 자카르타

2. 출장기간: 2014. 4. 28~5. 1

3. 출 장 자

소속	직급	성명	비고
국토연구원	국토관리·도시연구본부장	김태환	

4. 출장목적

□ 인도네시아 그린 인프라스트럭처 서밋 2014(INDONESIA GREEN INFRASTRUCTURE SUMMIT 2014) 참석 및 발표(PLENARY SESSION 3B : BUILDING GREEN INFRASTRUCTURE: REALITY VS CHALLENGES)

□ 인도네시아의 그린 인프라스트럭쳐 건설을 위한 한국의 선진사례 소개

□ 인도네시아의 지속가능한 경제와 향상된 인프라스트럭쳐를 건설할 차기 리더와의 교류협력 기회 모색

ㅇ 행사의 개요 및 목적

- INDONESIA GREEN INFRASTRUCTURE SUMMIT 2014
  29 – 30 April 2014, Ritz Carlton – Pacific Place Jakarta
- Combining the need to gear up for a green economy, and the current major agenda of developing infrastructure, KADIN infrastructure division as the ultimate platform for Indonesia's businesses, believe that embracing green economy principles as part of the Indonesia's infrastructure development is a necessity. In fact infrastructure is one of the tools to increase growth, but its development is still static in Indonesia

II. 출장일정

날짜	출발지	도착지	방문기관/장소	주요 수행업무	관계자
4.28 (월)	인천	자카르타		도착	-
4.29 (화)			Ritz Carlton – Pacific Place Jakarta	(08:00) OPENING CEREMONY 참석	Suryopratomo (News Director of Metro TV)
				(13:00) PLENARY SESSION 1 참석	Nur Pamudji (CEO of PLN)
				(15:30) PLENARY SESSION 2 참석	Kania Sutisnawinata (Lead anchor of Bloomberg TV)
4.30 (수)			Ritz Carlton – Pacific Place Jakarta	(08:30) PLENARY SESSION 3A 참석	- Irman Gusman (Chairman of House of Representatives Indonesia)
				(10:30) PLENARY SESSION 3B 발표	Rodrigo Chaves (Country Director of Indonesia of World Bank)
				(08:30) PLENARY SESSION 4 참석	Bernardus Djonoputro (Chairman of Indonesia Planology Expert)
				(10:30) PLENARY SESSION 5 발표	Rikard Bagun (Editor in Chief of Kompas)
5.1 (목)	자카르타	인천	-	도착	-

III. 수행사항

1. INDONESIA GREEN INFRASTRUCTURE SUMMIT 2014 참석

□ 일시 및 장소: 29 – 30 April 2014, Ritz Carlton – Pacific Place Jakarta

□ 참석자: H.E Mr. Suryo Bambang Sulisto (Chairman of Indonesian Chambers of Commerce and Industry), Bert Hofman (Chief Economist for East Asia and Pacific Region of World Bank), Prof. Dr. Boediono (Vice President of Republic of Indonesia), Armida Alisjahbana (Minister of National Development Planning of Indonesia), Yani Witjaksono (Head of Inter-Organizational Cooperation and APEC RE Forum of Indonesia Renewable Energy Society) 등 약 200명 참석

□ 주요 논의내용

○ 세션별 주제

구분	주제
OPENING CEREMONY	MINISTERIAL SESSION on GREEN INFRASTRUCTURE
PLENARY SESSION 1	RENEWABLE ENERGY TRANSFORMATION TOWARDS INDONESIA'S GREEN INFRASTRUCTURE
PLENARY SESSION 2	INDONESIA'S GREEN TRANSPORTATION AND INFRASTRUCTURE NETWORK READINESS
PLENARY SESSION 3A	GREEN INFRASTRUCTURE FROM FINANCIAL PERSPECTIVE
PLENARY SESSION 3B	BUILDING GREEN INFRASTRUCTURE: REALITY VS CHALLENGES
PLENARY SESSION 4	GLOBAL LEADERS ACTION AND EXPERIENCE OF CITIES FOR GREEN INFRASTRUCTURE
PLENARY SESSION 5	THE FUTURE OF INDONESIA'S GREEN INFRASTRUCTURE POLICY

○ Green economy was a focus of the landmark Rio Summit 2012, where despite the debates surrounding how green economy needs to be defined, there is a relative consensus on the need to increase the "green" intensity of every economies of the world.

◦ Inline with this understanding, KADIN infrastructure division with support from World Bank, JICA and ICLEI, plans to organize a conference, which will serve the objective of raising the awareness not only to the Indonesian businesses, but also to the society, on the strategy that Indonesia can pursue, in embracing green economy at the urban planning and infrastructure development level.

◦ Encourage business players in Indonesia to venture new industries adopting green solutions such as recycle and waste to energy through share of best practices to improve local industry and introduce local products (Indonesia) go to international as a financial solutions.

◦ Find deeper connection between the concept of green with better productivity, efficiency and quality as key elements for sustainable economic growth and provide input to the next leadership in improving the infrastructure in Indonesia in the future.

◦ The combination of KADIN infrastructure division as the ultimate platform for Indonesian businesses, with Kompas and Bloomberg as leading media locally and internationally, will allow this conference to become a landmark event, that will positively gear Indonesia up to the challenge of embracing green economy.

▲ 행사장 전면

▲ 행사장 사이드

▲ 발표

▲ 토론회

2. PLENARY SESSION 3B : 발표

□ 일시 및 장소: 30 April 2014, Ritz Carlton – Pacific Place Jakarta

□ 참석자: Dr. Nils Schmid (Deputy Prime Minister President of the State Government, Minister of Economics and Finance of the State of Baden-Württemberg), Antony Sprigg (CEO of Infrastructure Sustainability Council of Australia), Prof. Dr. Emil Salim (Chairman of President Advisory Council), James Gilling (First Assistant Director General in the Policy and Sector Division of AusAID)

□ 주요 논의내용

∘ The Case of Green City DevelopmentPlan : Korean Experience

- Green spatial development a vision for national territorial, regional & city development that satisfies lowcarbon, eco-friendly spatial structures with application of energy efficient and sustainable planning elements such as establishing lowcarbon transport systems, forming an energy-saving spatial structure, restoring river ecosystems, promoting green industries, etc.

∘ The Revised 4th CNTP (comprehensive national territorial plans : 2011~2020)

- Introduced Green Growth as its new vision **Aims to create a global green territory that will serve as a springboard for Korea's next leap forward.**

∘ Low-Carbon Green City

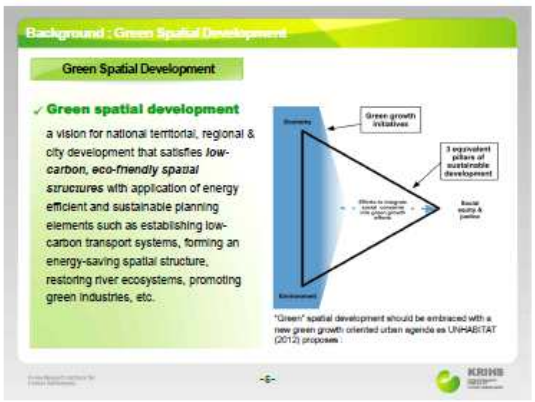
- A city designed to reduce potential carbon emissions and absorb emitted carbon to actively respond to climate change issues

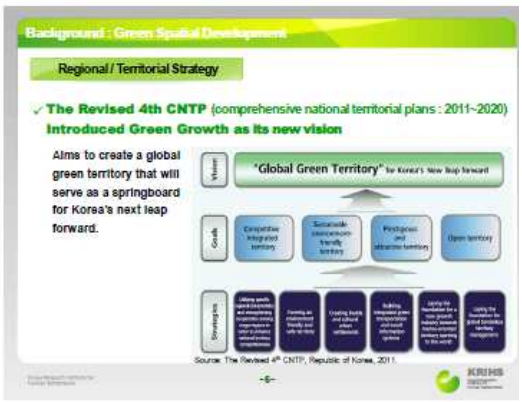
▲ 발표1

▲ 발표2

Ⅳ. 부록

□ 발표자료(BUILDING GREEN INFRASTRUCTURE: REALITY VS CHALLENGES)



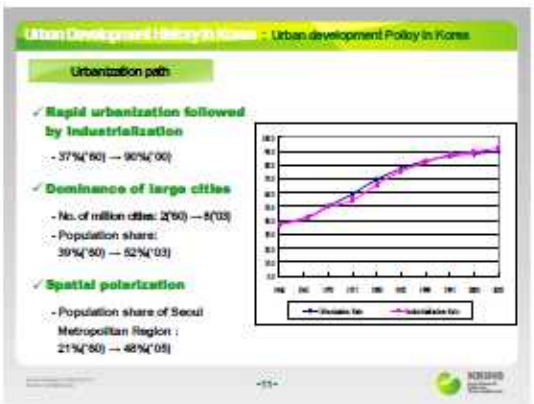



Background : Green Spatial Development
Concept of Green City Development
✓ Low-Carbon Green City : A city designed to reduce potential carbon emissions and absorb emitted carbon to actively respond to climate change issues
Green Land and Green City

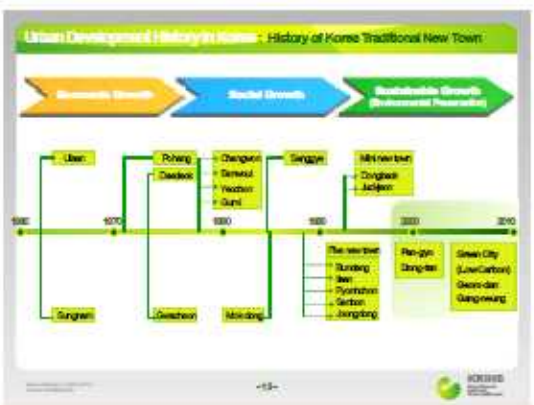

Background : Green Spatial Development
Concept of Low-Carbon Green City


II
Urban Development History in Korea


Urban Development History in Korea : Overview
Governments structure and Population Distribution
✓ Government structure
7 metropolitan governments
9 provincial governments
77 cities, 86 rural counties
69 city counties
✓ Population distribution
Urban areas : 90%
Capital region : 48%
7 Metropolitan cities : 47%


Urban Development History in Korea : Urban development Policy in Korea
Urbanization path
✓ Rapid urbanization followed by industrialization
- 37%('60) → 90%('00)
✓ Dominance of large cities
- No. of million cities: 2('60) → 5('03)
- Population share: 39%('60) → 52%('03)
✓ Spatial polarization
- Population share of Seoul Metropolitan Region : 21%('60) → 48%('05)


Urban Development History in Korea : Urban development Policy in Korea
Legal system
Name of Laws
Duration
✓ Legal system for new development
✓ Legal system for re-development


Urban Development History in Korea : History of Korea Traditional New Town


Urban Development History in Korea : History of Korea Traditional New Town
Joongdong
Pyongchon
Sanbon
Dongtan

Urban Development History in Korea : Green City Pilot Project by Central Governments

8 Green City Pilot Projects

✓ 9 Green City Pilot Projects commissioned by Central Government

Ministry of Environment

3 projects
Pilot City for Climate Change, Green City, Eco City

Ministry of Land, Transportation and Maritime Affairs

4 projects
Eco Rich City, Low-Carbon Green City Guideline, Sustainable New Town Planning Guideline, Innovative City

Joint Project by 7 Ministries

1 project
Low-Carbon Green Community

Korea Land & Housing Corporation

1 project
Environment-Ecology Planning

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Urban Development History in Korea : Green City Pilot Project by Central Governments

Category	Project Title	Goal	Key Directions	Authority
CITY LEVEL	Eco-Rich City	Establish and Promote a Low-Carbon driven Growth-Model City Where Environment and Economy Coexist and Cooperate	7 key considerations factors: Energy, Commuting, Waste, Recycle, Industry, Corridor, Humanism	Presidential Committee on Green Growth
	Pilot City Development for Climate Change	Encourage Awareness of and Participation in Measures to Cope with Climate Change and Reduce GHG Emission	GHG MLC main themes and pilot projects with central government by each municipality are selected	Dept. of Climate Change in Ministry of Environment
	Green City	Reinforce Environment Management Capability of Municipalities and Decentralized Administration	Provides incentives for municipalities selected as green city (prize money, environmental budget)	Dept. of Participatory Cooperation in Ministry of Environment
	Eco City	Promoting regional development focusing on backward areas while maintaining environmental preservation policies	Target backward areas (in mountainous, hillside, coastal region) with high interest in eco-city projects or participatory intention among residents	Dept. of Natural Policy in the Ministry of Environment

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Urban Development History in Korea : Green City Pilot Project by Central Governments

Category	Project Title	Goal	Key Directions	Authority
Community	Low-Carbon Green Community	Achieve the maximum possible energy supply target using created resources and biomass, while fostering Green New Deal projects and new growth dynamic projects	Select target cases within for pilot projects taking the municipalities' demand, locality, waste resources and available biomass energy into account, and prepare plans for effective operation and carbon-sink expansion	MIFAQ, MOST, MOGAHA, KAJEM/Korea Forest Service, KEITI, MLTM
Guideline	Low-Carbon Green City Guideline	Overcome risks of resources and environment challenged by climate change and create low-carbon green growth-urban spaces	UEIAs as basic information for status quo investigation and forecast on GHG emission, and reduction target	Dept. of Urban Policy, MLTM
	Sustainable New Town Planning Guideline	Create healthy environment and beautiful landscape in harmony with economic and social developments to achieve sustainable green growth	Create healthy environment and beautiful landscape with harmonized economic and social development to achieve sustainable green growth	Dept. of Urban Development, MLTM
	Environment-Ecology Planning	Secure basis of broad low-carbon green growth research capabilities and measures and capabilities to cope with global warming	Categorized into regional environment ecosystem planning and urban environment ecosystem planning, which are prepared before land use planning	Green Landscape Service in LH Corporation
Other	Innovative City	Realize low-carbon green city through eco-friendly construction and green jobs	Prepare growth plans to develop the 10 innovative cities as green growth hubs through localized specialization strategies including new/renewable energy	Dept. of Urban Development, MLTM

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II

Best Practice Cases

III-1. Gangneung Green City Development
III-2. Geomdan New Town Development
III-3. Magok Urban Development, Seoul

III-1. Gangneung Green City, National Pilot Project

Best Practice Cases : Gangneung Green City Development Project

Location

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Best Practice Cases : Gangneung Green City Development Project

2018 PYEONGCHANG Winter Olympic Place (Gangneung : Coastal Cluster)

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Best Practice Cases : Gangneung Green City Development Project

✓ **The first pilot project for Low-Carbon Green City in Gangneung city** (18,326k㎡) started from July, 2009.

- The project aims to create a globalized city to lead low-carbon green growth
- Until 2020, 29 sub-projects will be carried out

Phase 1 (~2012)	• Green Renaissance Landmark Project, Gyeongpo Lake Wetland Restoration Project, Green Path Project, Project for 10 Bicycle Cities, etc
Phase 2 (~2016)	• Home Stream Project for Gyeongpo Stream, Healing Forest Project, Green Forest Path, LED Security Lighting Project, Green City New/Recyclable Energy Project, ZEO Village Project, etc
Phase 3 (~2020)	• Green Technology Theme Park Development, U-City, Energy Generation Facility using Waste Resources, etc

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Best Practice Cases : Gangneung Green City Development Project


Best Practice Cases : Gangneung Green City Development Project
Phase 1 (2008 ~ 2013) : 8 Projects ($ 80 million)


Best Practice Cases : Gangneung Green City Development Project


Best Practice Cases : Gangneung Green City Development Project


Best Practice Cases : Gangneung Green City Development Project


Best Practice Cases : Gangneung Green City Development Project


Best Practice Cases : Gangneung Green City Development Project


III-2. Geomdan Newtown

Best Practice Cases : Geomdan New Town Development Plan

Geomdan Newtown

- Location : Incheon Metropolitan City, near Seoul
- Area: Approx. 10.1 km² (3.06 Pyeong)
- Population: 230,000 (92,000 households / 127 persons per ha)
- Project Duration: Feb. 2009 ~ Dec. 2014
- Promoter: Incheon City Government, Incheon Urban Development Corporation, Korea Land & Housing Corporation
- Projected Cost: Approx. 1[illegible]billion/Won(1[illegible]billion USD)

Best Practice Cases : Geomdan New Town Development Plan

Geomdan Newtown

✓ **Energy-Saving Planning**

- 10 minute distance from subway station to transportation centers
- Pedestrian network for reducing energy consumption

Categories	Methods	Techniques	Adopted Techniques
Urban Structure	Formation	Compact City Public Transportation	Station-centric Allocation (TOD, BOD, POD)
Site Planning	Pedestrian-centric Environment	Pedestrian Network Spatially Separated Road Traffic Calming	In-site pedestrian/bike road network Parking lots on site fringes Traffic Calming
	Building Allocation	Planning facing directions & wind paths	Construction considering buildings facing directions
	Microclimate	Green spaces & water places	Green space & water place
Buildings & Facilities	Renewable Energy Use	Buildings with renewable energy system	Zero-energy town Transit mall
	Water & Ventilation	Gray water & ventilation	Building system recycling gray water ventilation

Best Practice Cases : Geomdan New Town Development Plan

Geomdan Newtown

✓ **Urban Structure #1**

- Public transportation (subway) centric system (TOD)
- All transits in the town are accessible in 10 minutes by foot (POD) or by bike (BOD)
- First urban planning based on eco-friendly transportation system

Best Practice Cases : Geomdan New Town Development Plan

Geomdan Newtown

✓ **Urban Structure #2**

- **Station-centric Allocation**
  - 3 living unit areas divided by subway station
  - Compact development on pedestrian network centered on subway station
- **Transportation Networks**
  - 10 minute distance to subway station by foot (POD) or by bicycle (BOD)
  - Circular pedestrian/bicycle network for interconnecting living unit areas

Best Practice Cases : Geomdan New Town Development Plan

Geomdan Newtown

✓ **Site Planning**

- **Zero Energy Town**
  - **Aims** to control and restrict the use of traditional (fossil) energy within town
  - **Target population**: 5,000 households
  - **Facilities:** Houses, Elementary school, community facilities
  - **Strategies**
    - pedestrian / bicycle network allowing 5 minute access to anywhere incl. subway and bus station
    - Traffic calming to restrict internal car traffics
    - Buildings with renewable energy system

Best Practice Cases : Geomdan New Town Development Plan

Geomdan Newtown

✓ **Site Planning**

- Traffic Calming System to restricting car traffics within site
- Parking lots on basement or site fringes to separate cars from pedestrians
- Internal roads fit to walkers, perambulators or wheelchairs

Best Practice Cases : Geomdan New Town Development Plan

Geomdan Newtown

✓ **Site Planning**

- **Allocate buildings and control heights and spaces, considering seasonal shades**
  - Buildings with low floor on southern sections and partially on northern
  - Design all buildings facing south direction but in diverse manner

Best Practice Cases : Geomdan New Town Development Plan

Geomdan Newtown

✓ **Building Facilities**

- **Equips buildings with renewable or new energy system**
  - Requires 25~30m² areas per household considering 250~300 kWh electric consumption per household
  - Pursues low floor houses for solar system, also utilizes wind and geothermal energy and waste heat
  - Energy systems focused on the collective consumption
- **Design residential site with Energy saving facilities**
  - Connects green spaces and water places to create microclimate
  - Recycling system and greywater system

Best Practice Cases : Geomdan New Town Development Plan

Geomdan Newtown

✓ **Buildings & Facilities**

- **Transit Mall**
  - Eco-friendly vehicles' intersection
  - Complex use: commercial & business district
  - Hosts diversified activities by connecting key in-site facilities
  - New and renewable energy system on buildings

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III-3. Magok District Urban Development, Seoul

Best Practice Cases : Magok Urban Development Plan, Seoul

Magok District

- Located at outskirt of Seoul
- Areas : approx. 3.3 million ㎡
- Aims to develop eco-friendly high-tech industry complex accommodating harmonized land use
- **Strategies:**
  - Functions as urban center in west-southern Seoul
  - Contributes globalization of Seoul city
  - Provides high-end culture & eco-friendly living conditions

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Best Practice Cases : Magok Urban Development Plan, Seoul

Magok District

✓ **Renewable Energy Consumption**

- Accommodates renewable world- largest energy provision system using sewage water
- World largest fuel-cell generation(10MW) to digest 10% energy consumption in town

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Best Practice Cases : Magok Urban Development Plan, Seoul

Magok District

✓ **Buildings high-efficient energy consumption**

- Apartment houses with highest energy efficiency (approx. 25% energy saving)
- Other buildings with 81 EPI** (approx. 25% energy saving)

** EPI: Energy Performance Index

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Best Practice Cases : Magok Urban Development Plan, Seoul

Magok District

✓ **Waterfronts**

- Constructing world class waterfronts thru Int'l competition for planning & design ideas
- Link with Hangang Renaissance strategies
- Mitigating Urban Heat Island

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Best Practice Cases : Magok Urban Development Plan, Seoul

Magok District

✓ **Efficient Water Consumption**

- Recycling water from Han River
- Rainwater Catching & natural recycling
- Treated water from Seonam Water Recycling Center
- Prevention of drought & urban heat island by connecting streams of Han River & circulating water
- Expecting 3% to 4% temperature reduction

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Best Practice Cases : Magok Urban Development Plan, Seoul

Magok District

✓ **Green Technology Cluster**

- An industrial complex with R&D complex (740,250 ㎡)
- Accommodates three potential techs: GT(39.4%), IT(33.9%), BT(26.7%)
  - GT: renewable/unutilized energy businesses
  - IT: IT service businesses
  - BT: bio-chemical & bio science businesses

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Best Practice Cases : Magok Urban Development Plan, Seoul
Magok District
Eco-friendly Transportation (1)
• Walkability
• Urban development focused on public transportation
• Underground parking spaces
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Best Practice Cases : Magok Urban Development Plan, Seoul
Magok District
Eco-friendly Transportation (2)
• Bicycle-friendly environment
• Transit Mall
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Best Practice Cases : Magok Urban Development Plan, Seoul
Magok District
Green Corridors
- Culture corridor attracting citizens visits
- Eco corridor providing ecological experiences
Culture Corridor
Eco Corridor


Guideline of Green City Development Plan


Guideline of Green City Development Plan
"Low carbon Green City = Low carbon + Green City"
Green Independent
Use of renewable energy
Expansion of carbon sinks
Carbon disposing technology
Green Environment
Use of environment friendly low carbon lands,
Green transportation
Virtuous cycle of water and resources
Green Society
Environmental education
Activation of eco community
Green Economy
Use of local green recource
making together a happy green base
Low carbon Green City
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Guideline of Green City Development Plan
Structure of Guideline
Category
Concept
Guideline
Land Use, Spatial Structure
Green Transportation
Green Energy
Green Building
Green Industry
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Guideline of Green City Development Plan
1) Land Use - Spatial Structure
Concept
Directions
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Guideline of Green City Development Plan
• Compressed Spatial Structure (Compact City)
Concept
Directions
Methods
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Guideline of Green City Development Plan
Mixed Use Planning
Concept
Directions
Methods
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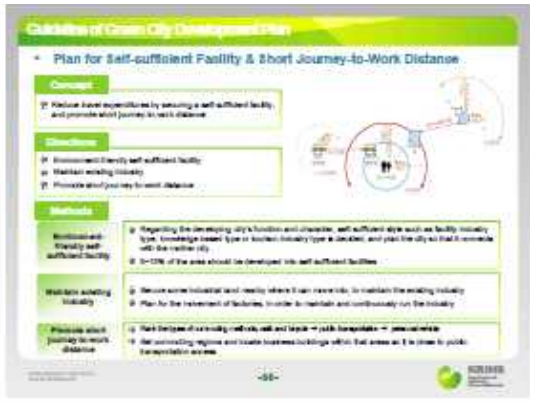
Guideline of Green City Development Plan
Plan for Self-sufficient Facility & Short Journey-to-Work Distance
Concept
Directions
Methods
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Guideline of Green City Development Plan
2) Green Transportation
Concept
Directions
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Guideline of Green City Development Plan
Development of Low-Carbon Transportation System
Concept
Directions
Methods
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Guideline of Green City Development Plan
Transportation Centralized Development (TOD)
Concept
Directions
Methods
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Guideline of Green City Development Plan
Public Transportation Access System
Concept
Directions
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Guideline of Green City Development Plan
Public Transportation Transfer System
Concept
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Guideline of Green City Development Plan
Car Sharing System
Concept
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Guideline of Green City Development Plan
Bicycle Network
Concept
Directions
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Guideline of Green City Development Plan
Bicycle Road
Concept
Directions
Methods
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Guideline of Green City Development Plan
Car Free Zone
Concept
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Guideline of Green City Development Plan
3) Green Energy
Concept
Directions
Cases
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Guideline of Green City Development Plan
Construction of Waste Recycling System
Concept
Directions
Methods
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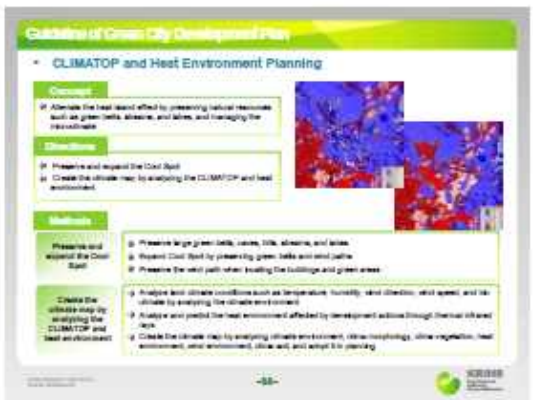
Guideline of Green City Development Plan
CLIMATOP and Heat Environment Planning
Concept
Directions
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Guideline of Green City Development Plan
Creation of Heat Island Prevention Zone
Concept
Directions
Methods
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Guideline of Green City Development Plan
Network for Wind Ventilation Path
Concept
Directions
Methods
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Guideline of Green City Development Plan
Rainwater Utilization System (Decentralized Rainwater Management)
Concept
Directions
Methods
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Guideline of Green City Development Plan
4) Green Building & Industry
Green Building
Concept
Directions
Cases
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Guideline of Green City Development Plan
4) Green Building & Industry
Green Industry
Concept
Directions
Cases
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Guideline of Green City Development Plan
Low Carbon Green City
Green Transportation
Green energy
Green Building
Green Industry
Guideline of Green City Development Plan


THANK YOU!