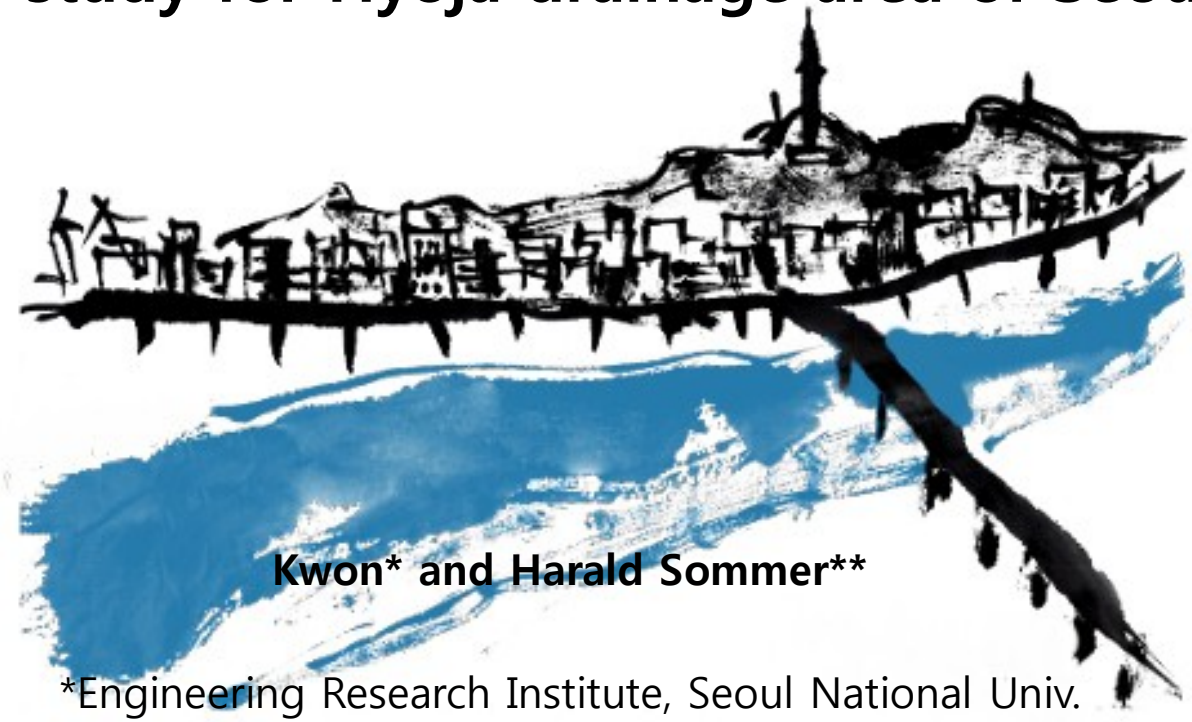
KORANET
2014년 4월 8일

Decentral rainwater management plan for the response to climate change with consideration for Nature, Neighbor and Next generation

-a case study for Hyoja drainage area of Seoul Korea



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**IPS(Ingenieurgesellschaft Prof. Sieker mbH)

Hyoja Area 1953

Hyoja Area 1953


Hyoja Area 2013

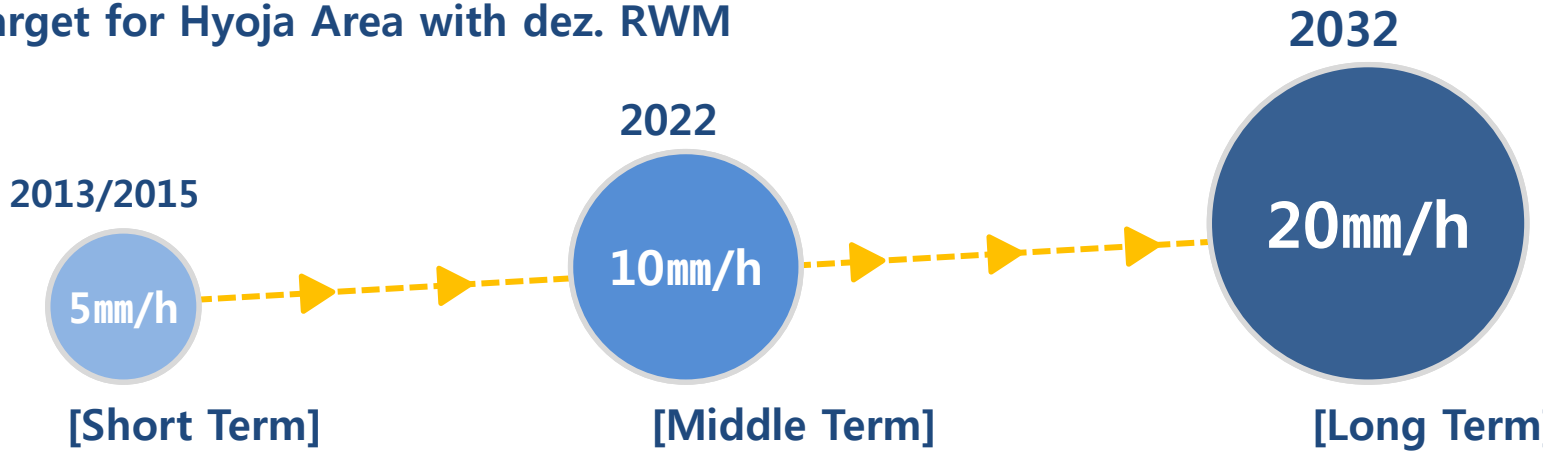
Problem

2010 -9-21 Hyoja Area(75mm/hr, 202mm/3h)

2011- 7-27 Gangnam Area(65mm/hr, 103mm/3h)

Target

Target for Hyoja Area with dez. RWM



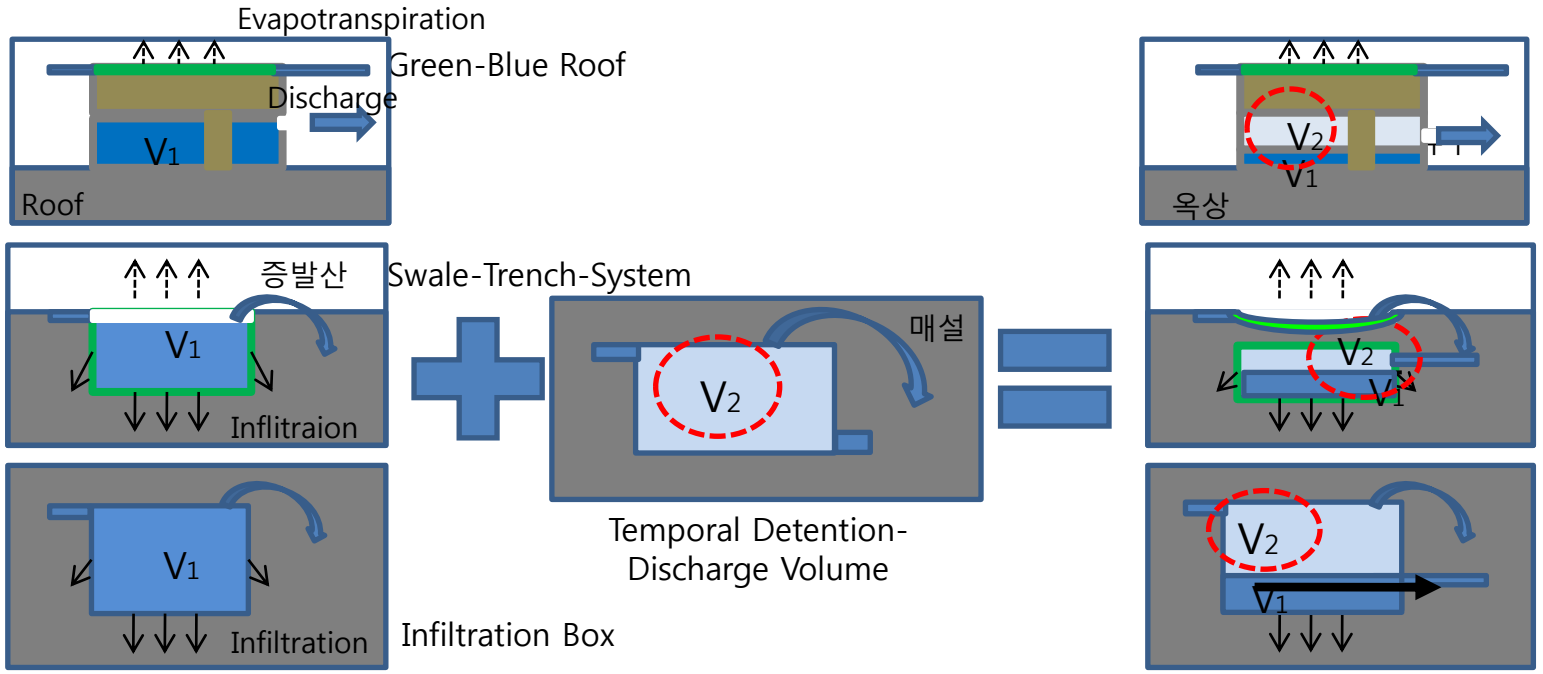
Public → Public + Private → Private

	Year	Water cycle			Flood Control
		Evapotrans. [㎥/y]	Infiltration [㎥/y]	Surface runoff [㎥/y]	Discharge (95㎜/h)
2012	-	1,721,763	1,727,501	5,297,239	-
Short	2013/ 2015	1,729,234	2,093,517	4,985,390	5mm/h
Middle	2022	1,756,490	2,342,688	4,758,232	10mm/h
Long	2032	1,824,154 (20.5%)	2,711,112 (30.6%)	4,321,087 (48.8%)	20mm/h

Method

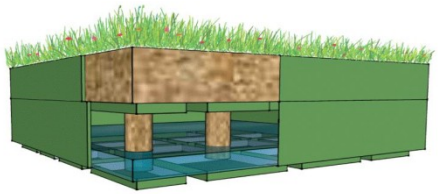
Dez. RWM Measures with flood control function

3 Measures

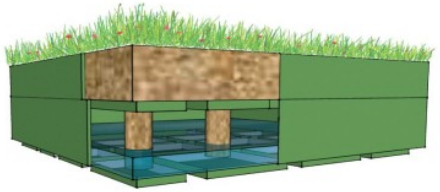


Method

Dez. RWM Measures with flood control function

	Green-Blue Roof	Infiltration Box	Swale-Trench-System
Measures	 		

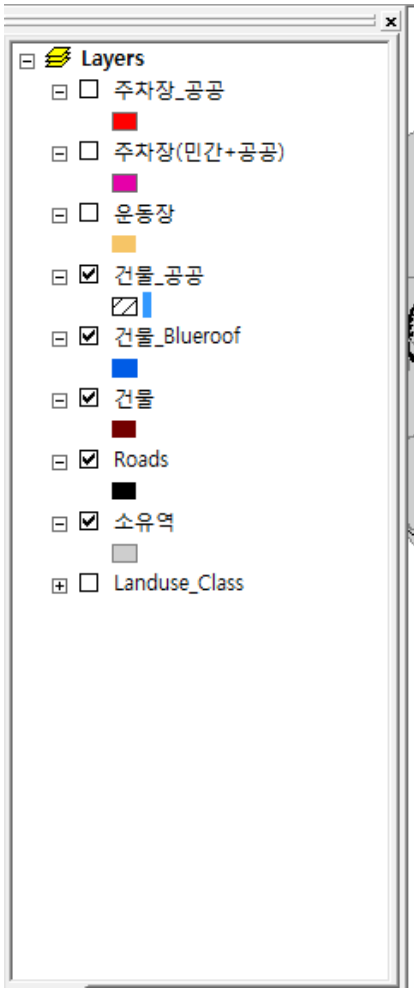
Method

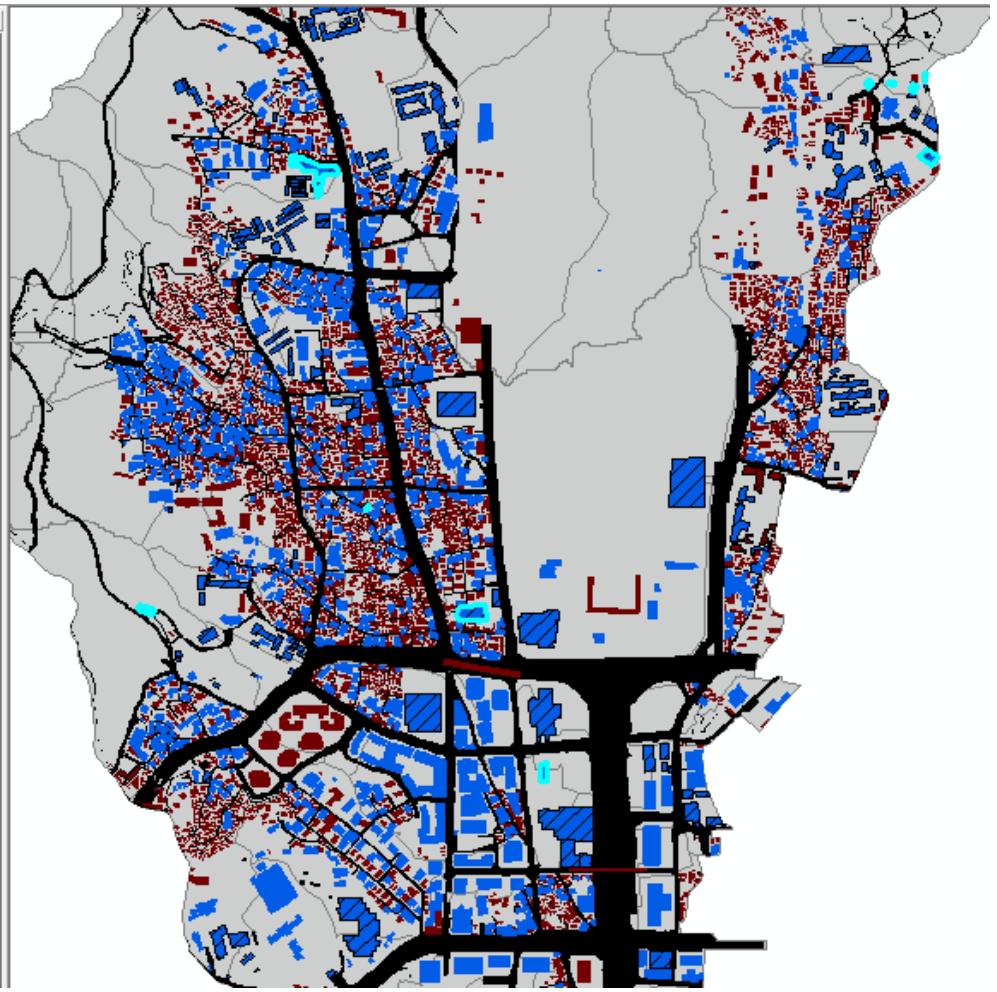


Green-Blue Roof

Possible Area Analysis

- **Object**: 20 Public Buildings
- **Area**: 38,494㎡
- **Rate**: 5.3%

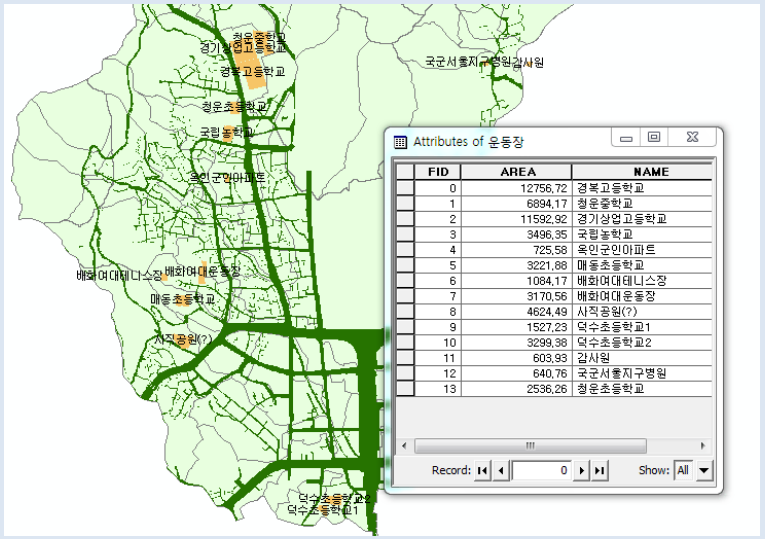




Method

Infiltration Box

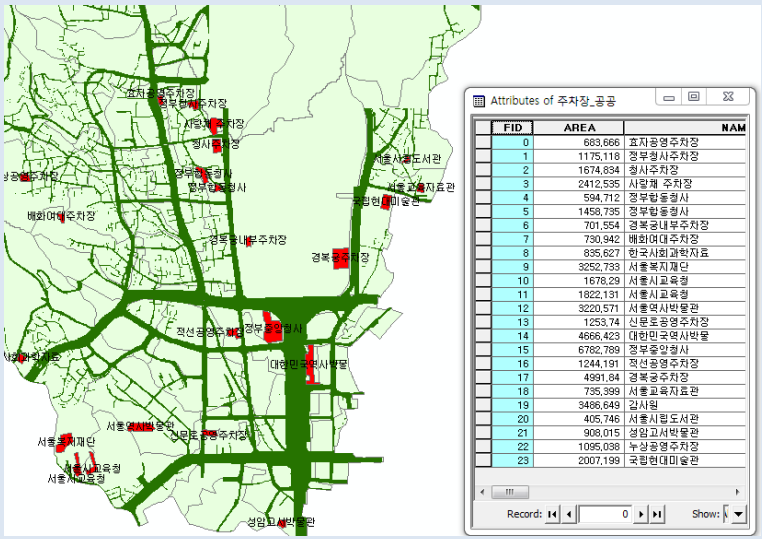
Playground



Total

13개

Parking Area



Total

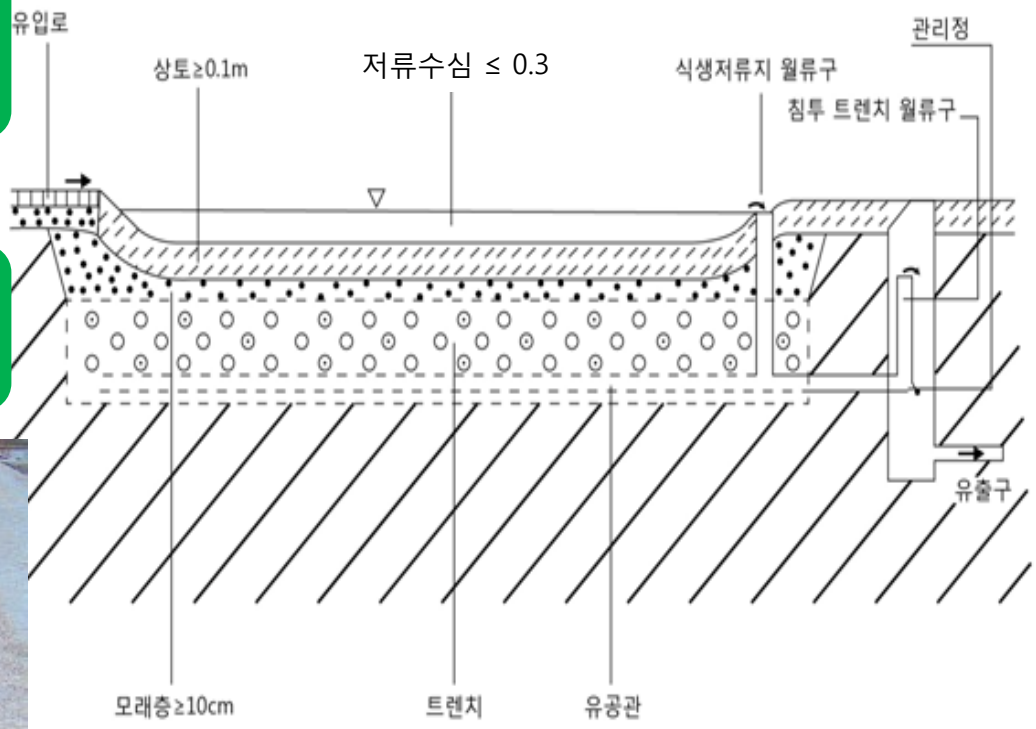
23개

Method

Swale-Trench-System

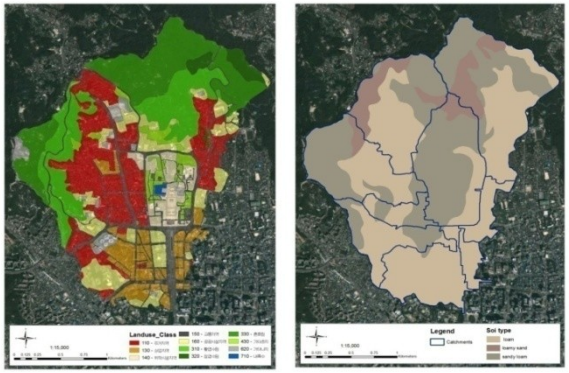
Object

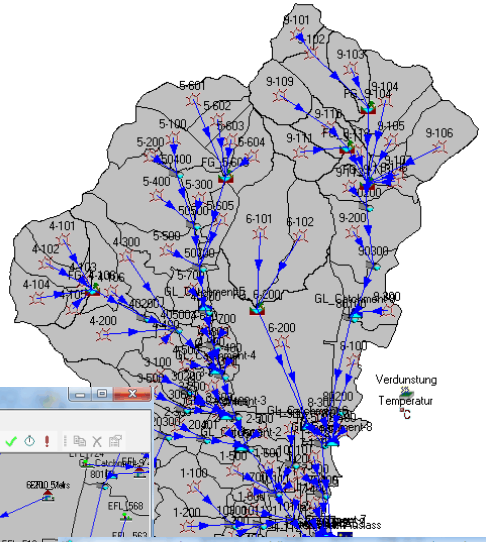
**Park, Street, Plaza,
Parking area and so on**

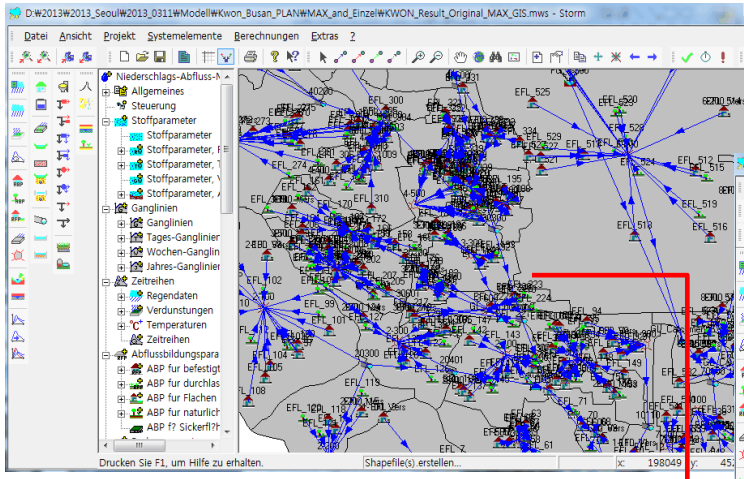


Method

Rainfall – Runoff Model with STORM(IPS)

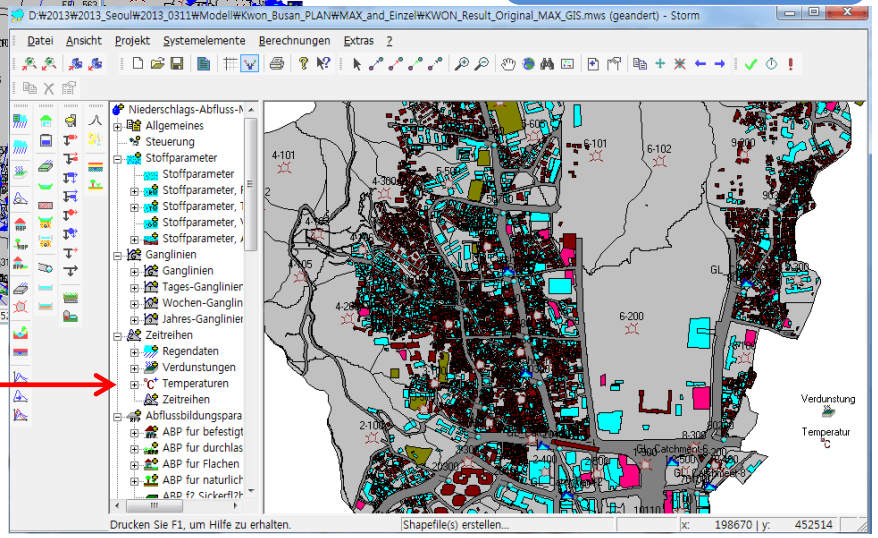






독일 STORM 모형

시나리오 모의
및 최적화



Method

Simulation Approach

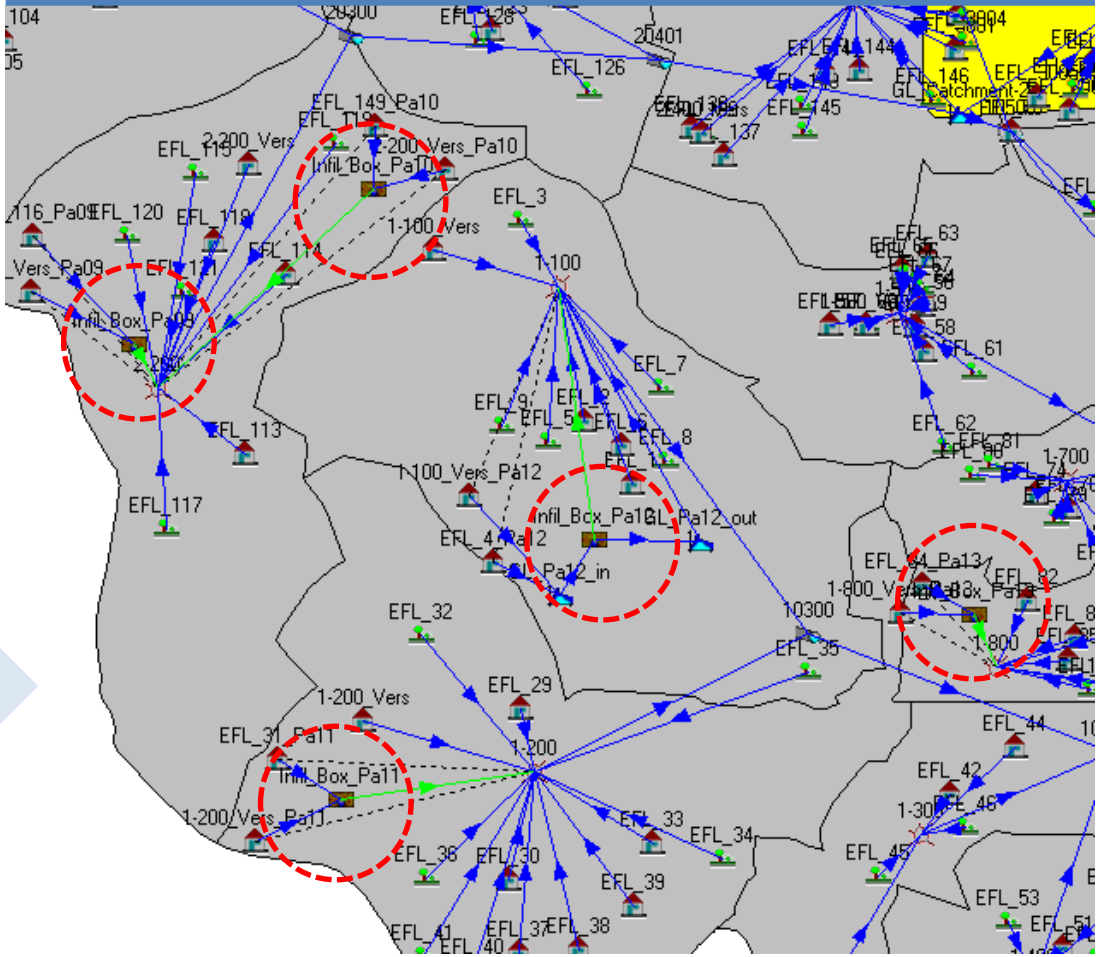
① Individual Measures

+

② Catchment Area-Measure Combination Method

STORM모형

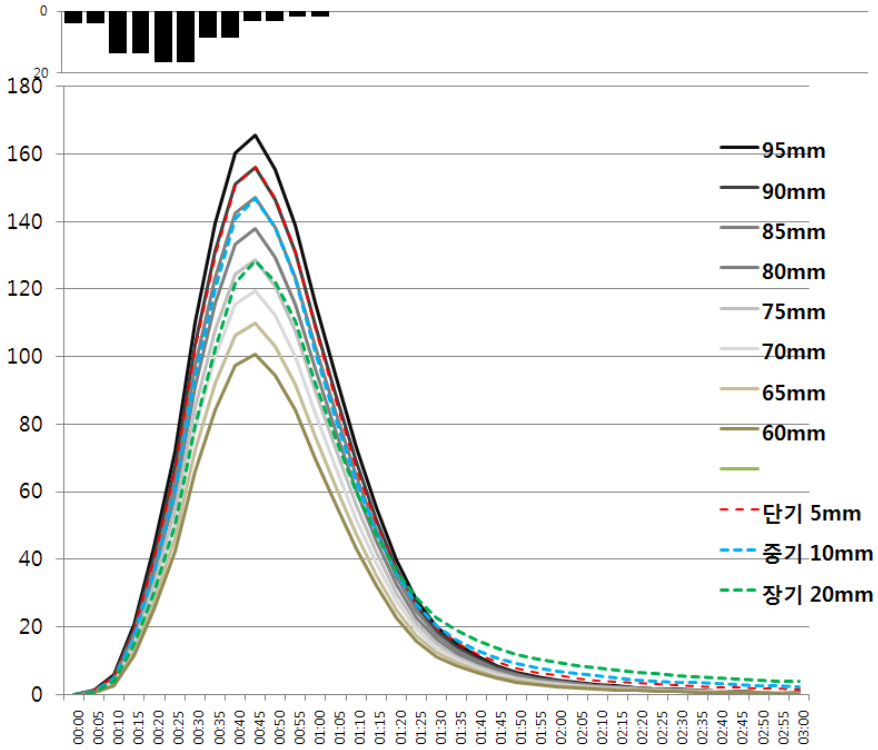
STORM Model

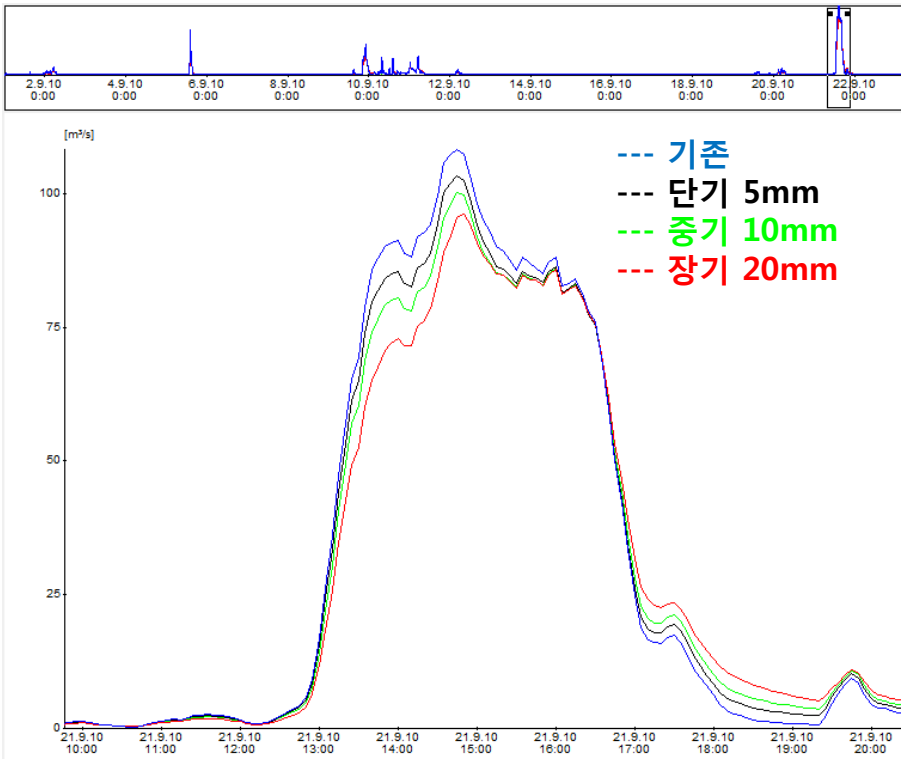


Results

Flood Control

Reduction of Peak flow in 95mm/hr Huff 2. Distribution and at 2010.09.21 event

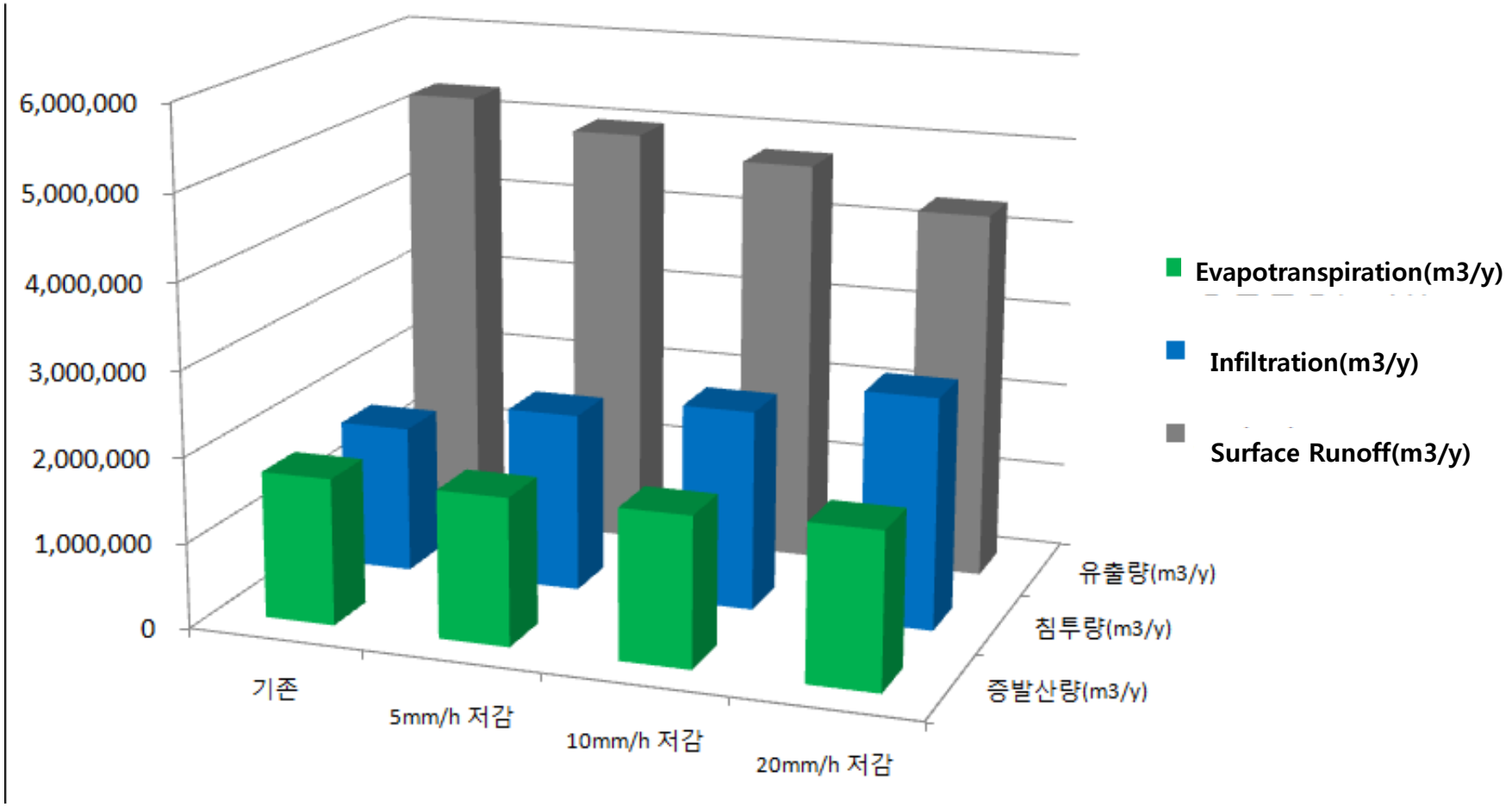




(2010-9-21)

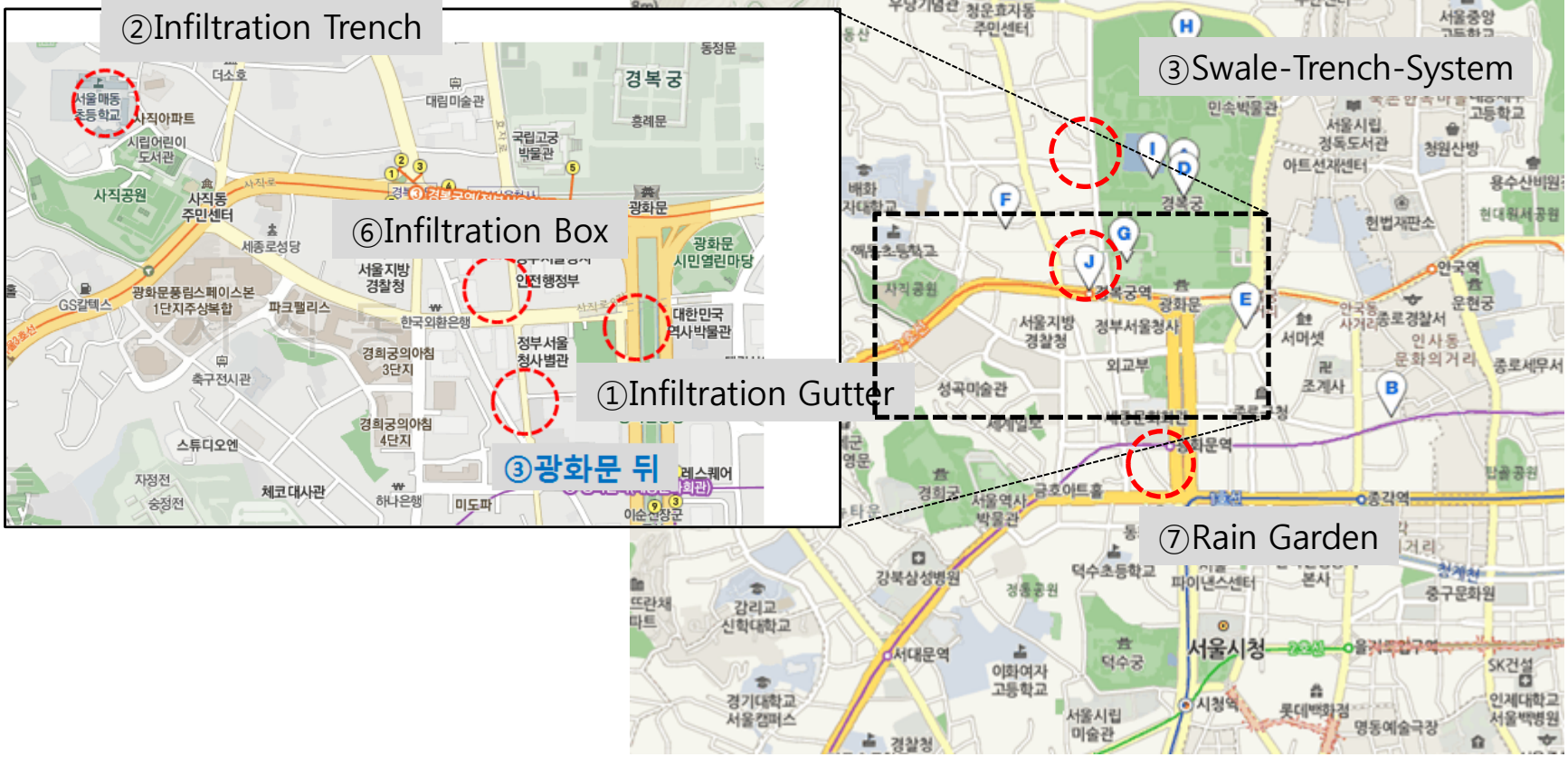
Results

Water cycle



Long Term Simulation(2002-2011, Seoul, 5min Interval)

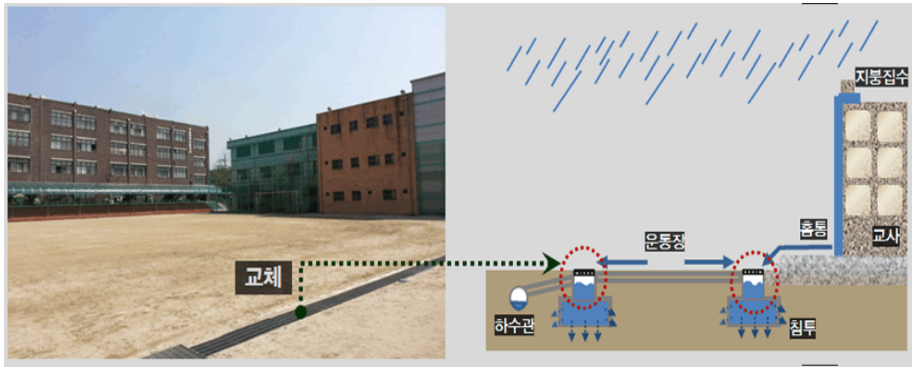
Construction of Model Sites



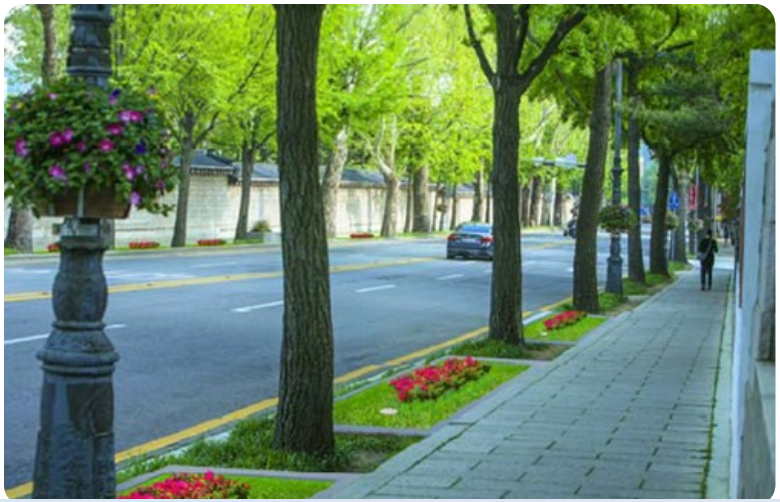
Construction of Model Sites

① Infiltration Gutter

② Infiltration Trench

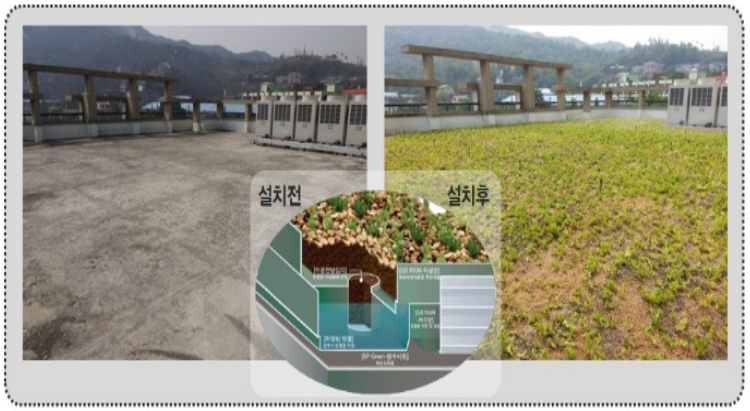


③ Swale Trench System



Construction of Model Sites

④ Green Blue Roof



⑤ Permeable Pavement

⑥ Infiltration Box

⑦ Rain Garden

블루루프

침투형 배수로

친환경보도블록

증발산저류형 배수로

침투저류조

침투형 빗물받이

Thank You Very Much