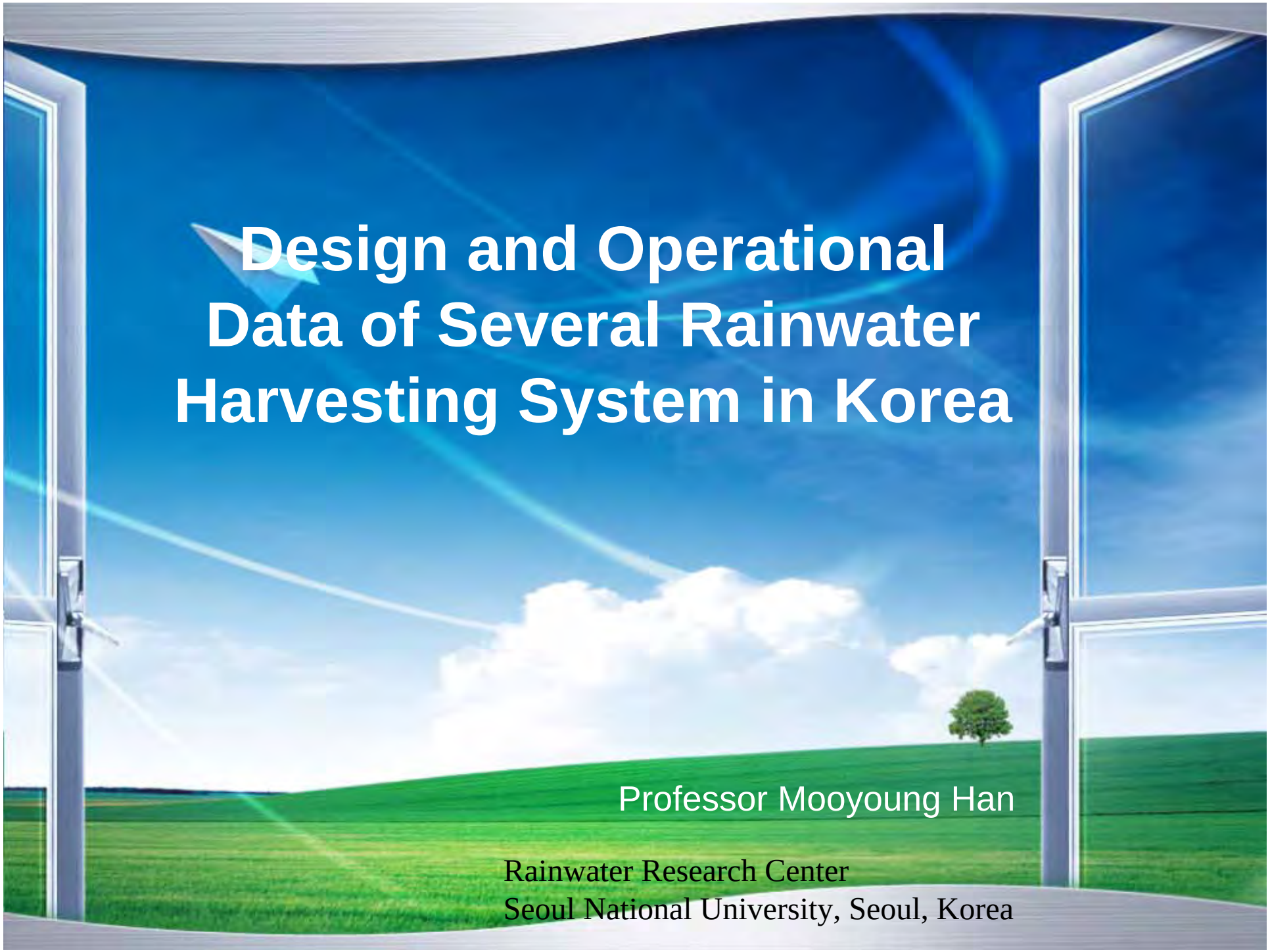


Design and Operational Data of Several Rainwater Harvesting System in Korea

Professor Mooyoung Han

Rainwater Research Center
Seoul National University, Seoul, Korea

Multi Purpose and Proactive Rainwater Management

Multi-player strategy!

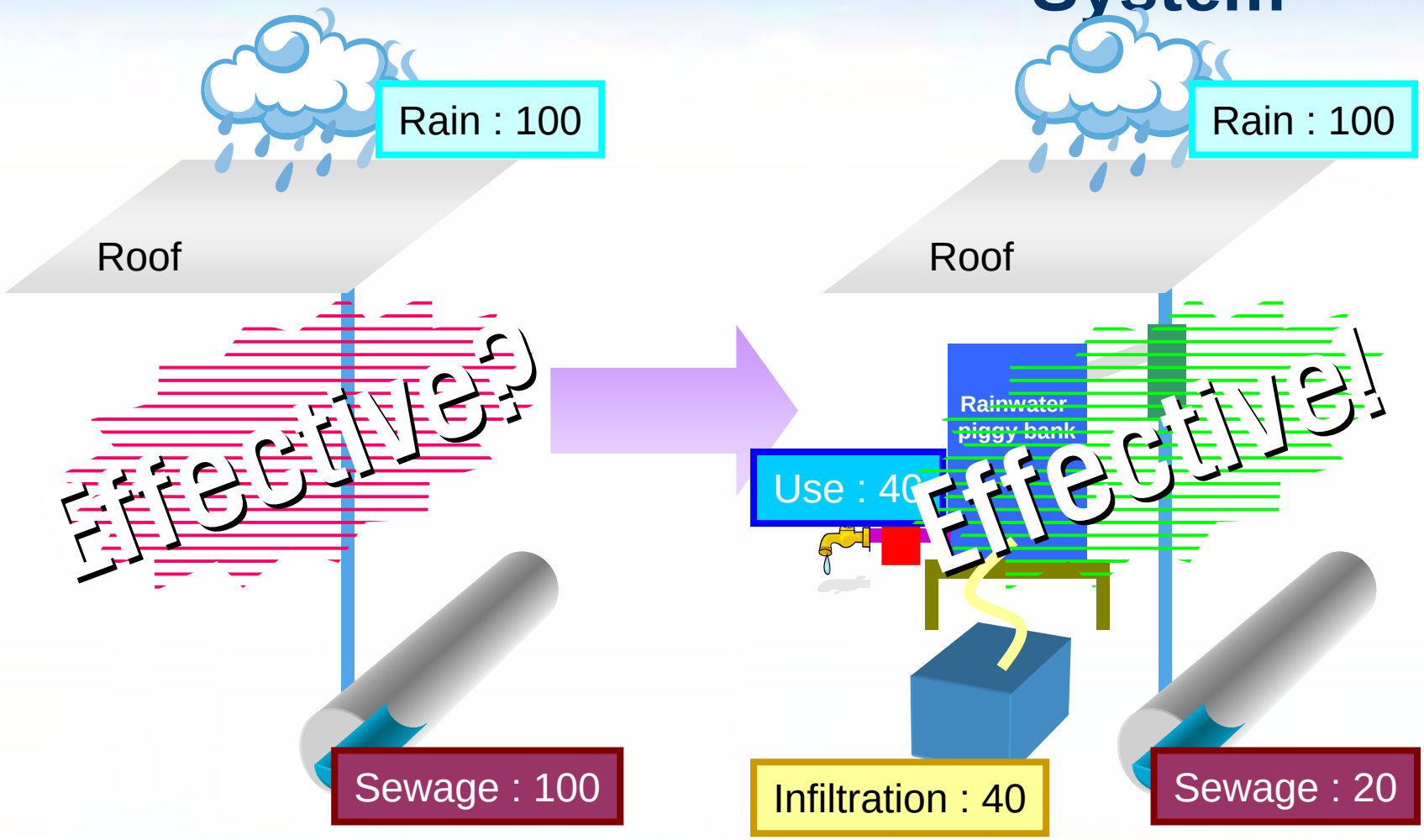
Water Management

Ideal Management

Contents

Small Scale

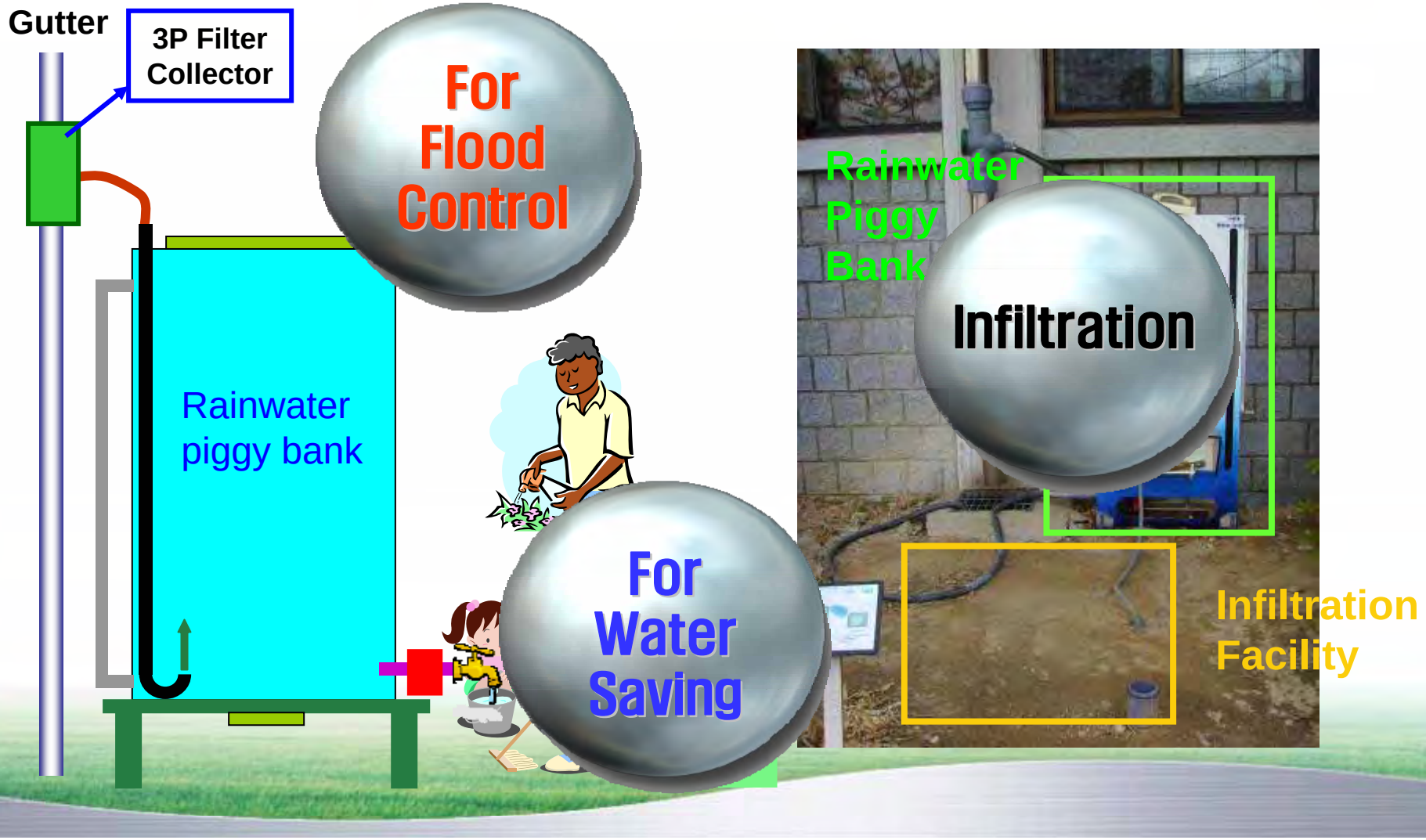
Mass Balance of Rainwater Harvesting System



Before Rainwater Harvesting

After Rainwater Harvesting

Rainwater Piggy Bank Microcredit Project

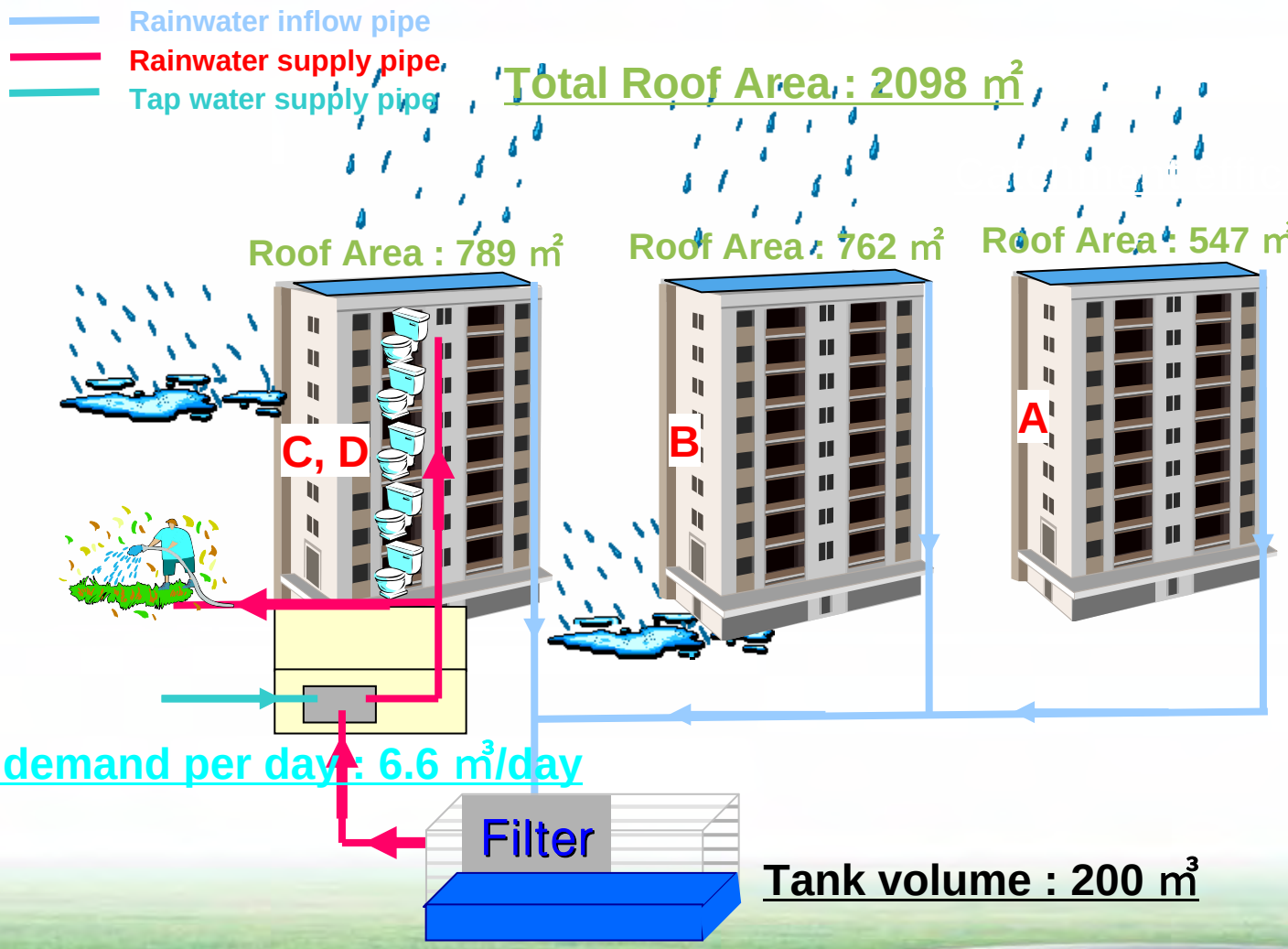


Decentralized Rainwater Management Projects

Decentralized Rainwater Management Projects

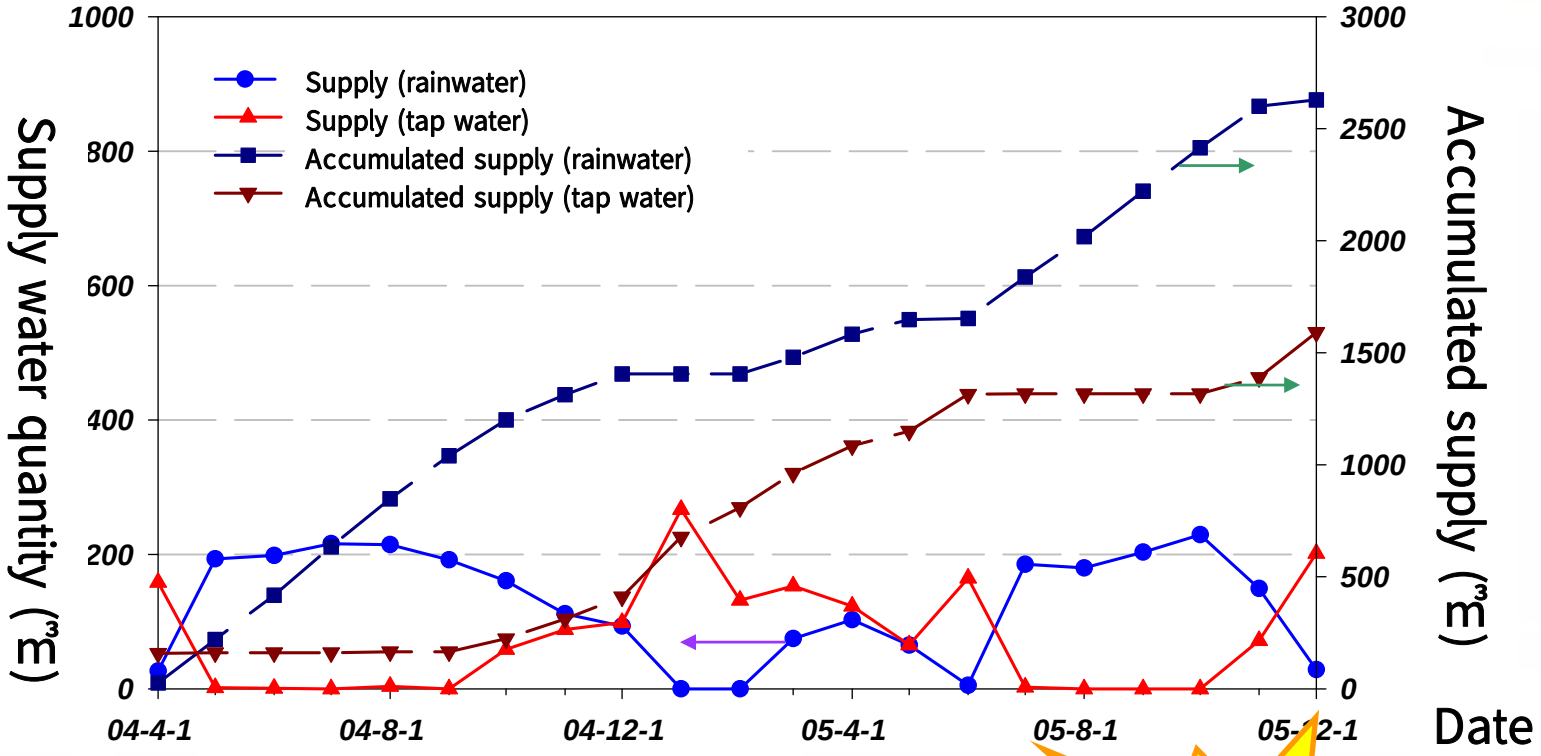
Rainwater harvesting facility in SNU

Rainwater Harvesting System in SNU Dormitories



Rainwater Harvesting System in SNU Dormitories

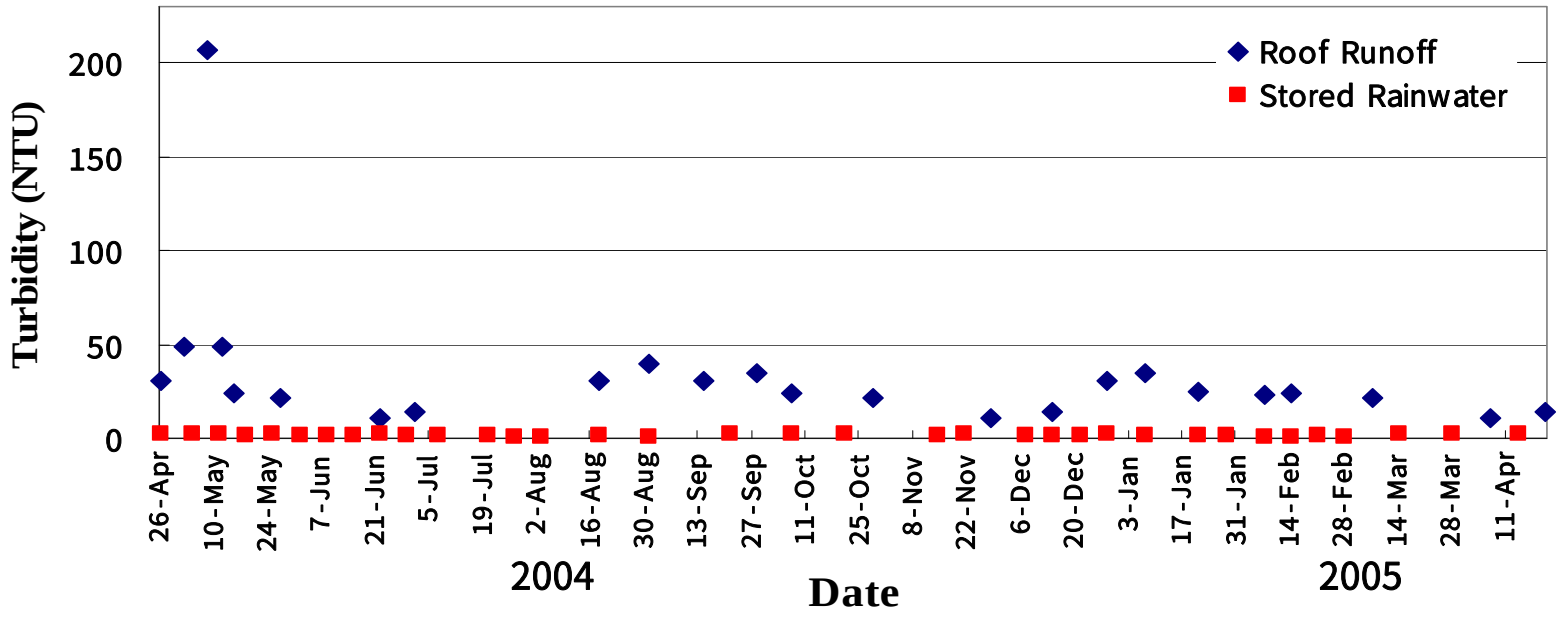
- Rainwater use



Water Saving Efficiency : **62.3 %**

Rainwater Harvesting System in SNU Dormitories

• Quality - turbidity



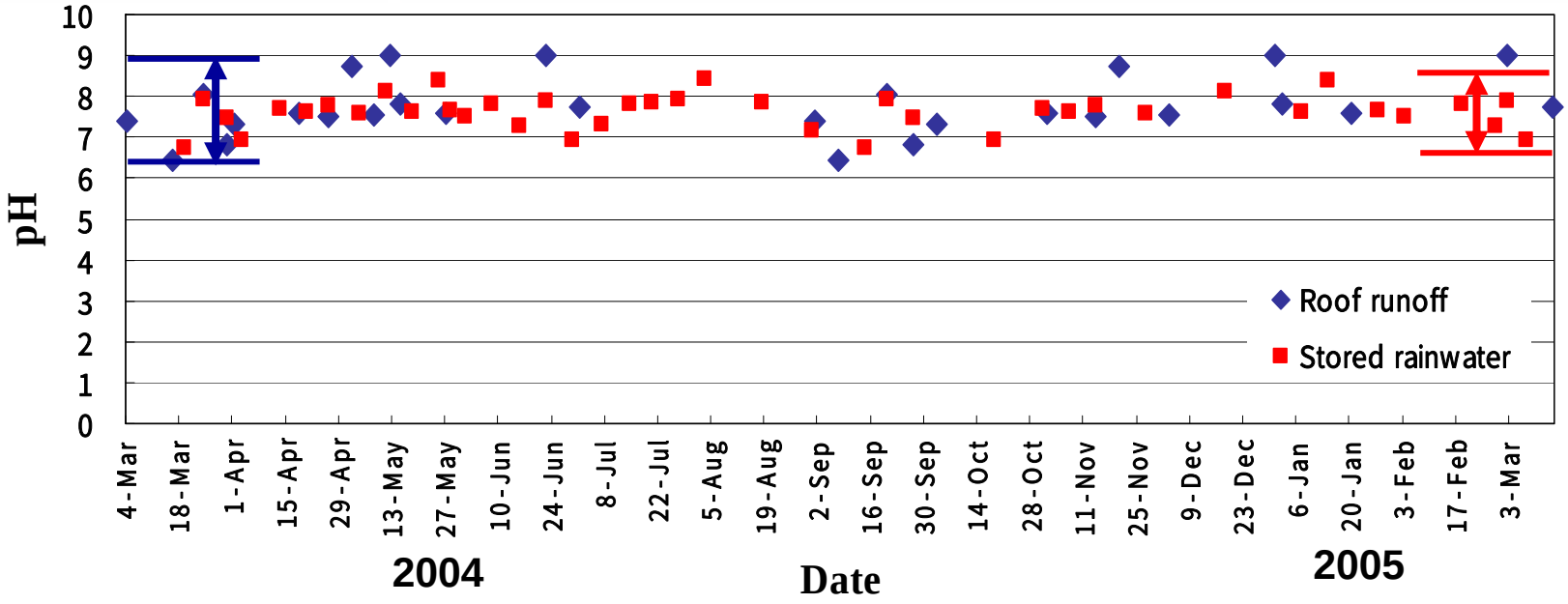
Roof Runoff : 10.6~207 NTU

Stored Rainwater : 1.29~2.35 NTU

Natural Sedimentation

Rainwater Harvesting System in SNU Dormitories

• Quality – pH



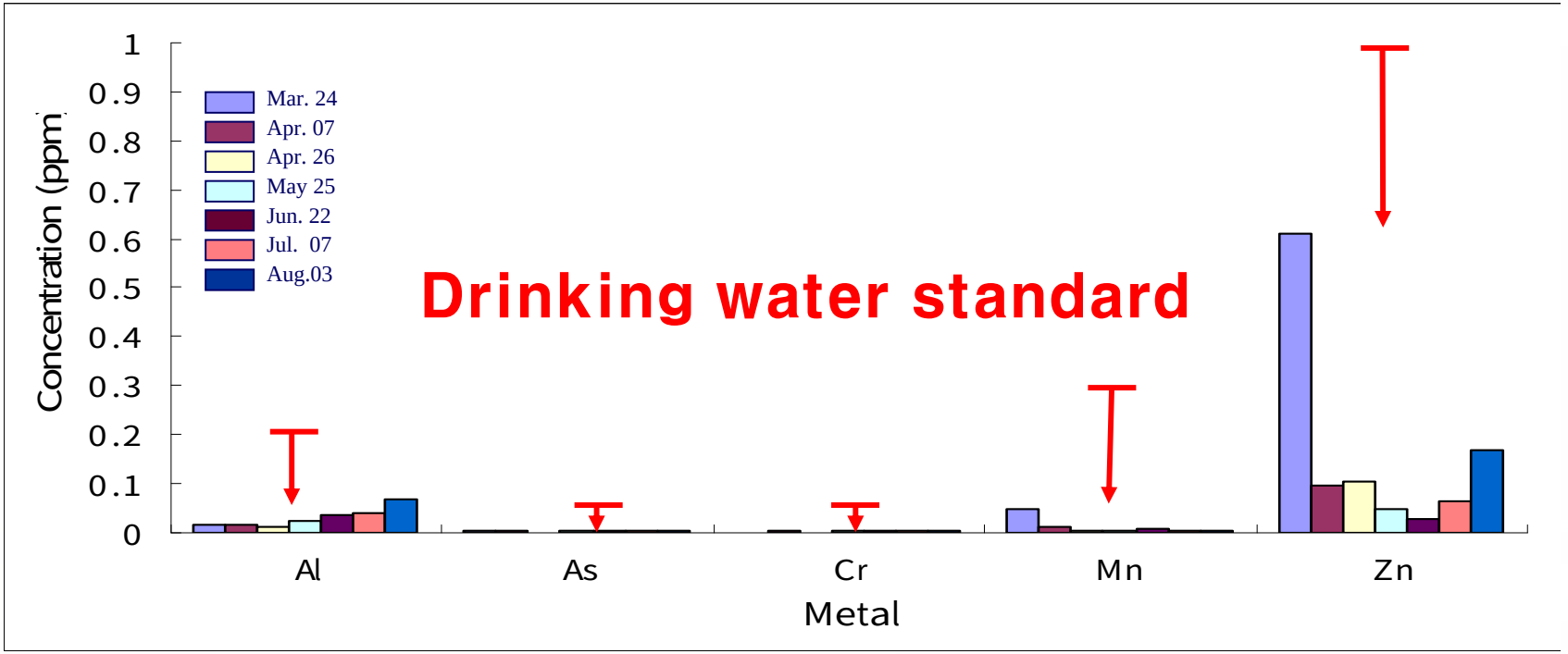
Drinking water standard : pH 5.8~8.5

Roof Runoff: pH 6.5~9.0

Stored Rainwater: pH 6.8~8.4

Rainwater Harvesting System in SNU Dormitories

• Quality – Heavy metal



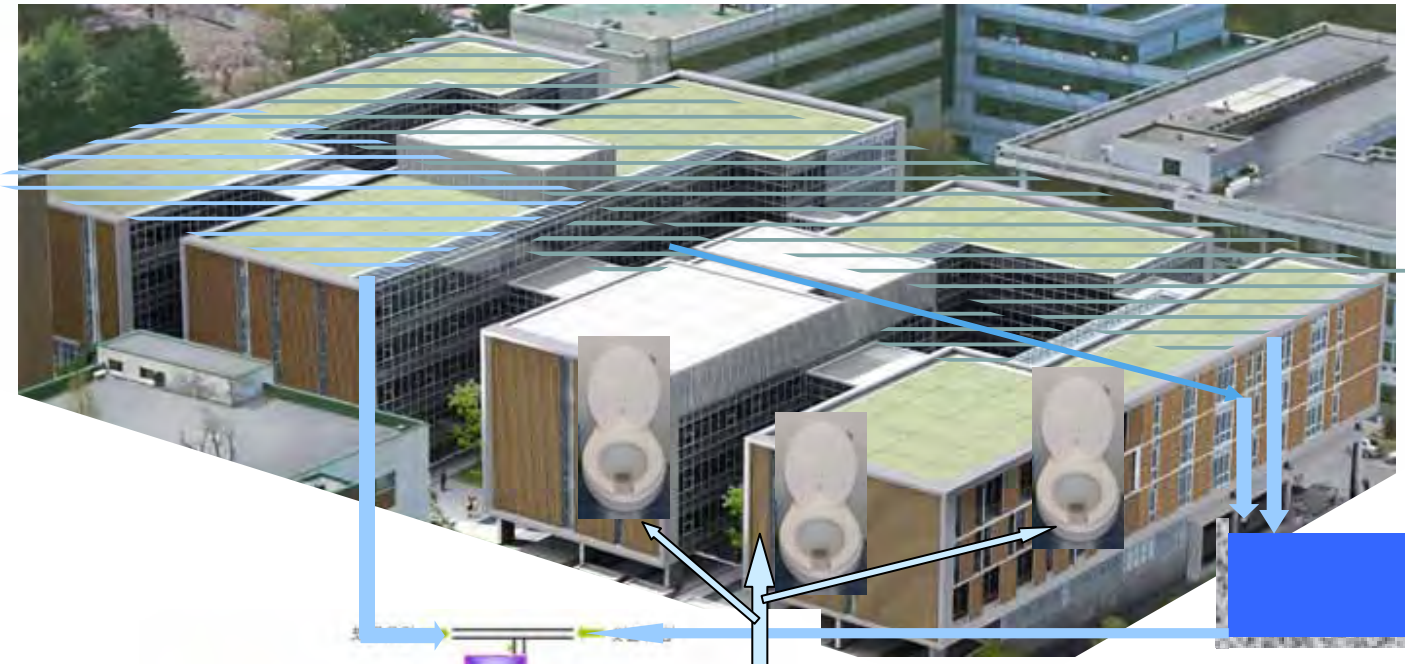
Satisfaction of drinking water standard

Heavy metal will be removed by natural sedimentation

Rainwater Harvesting System in Building 39

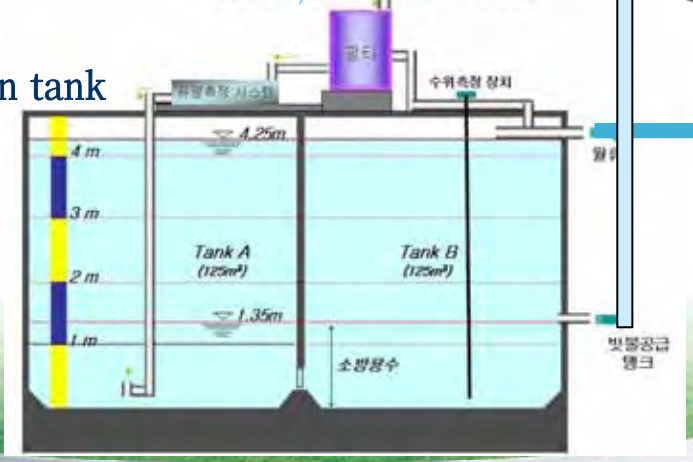
Completion Date	Oct. 2005
Catchment area	3,652 m^2
Rainwater Tank	250 m^3

Rainwater Harvesting System in Building 39



Small tank

Main tank

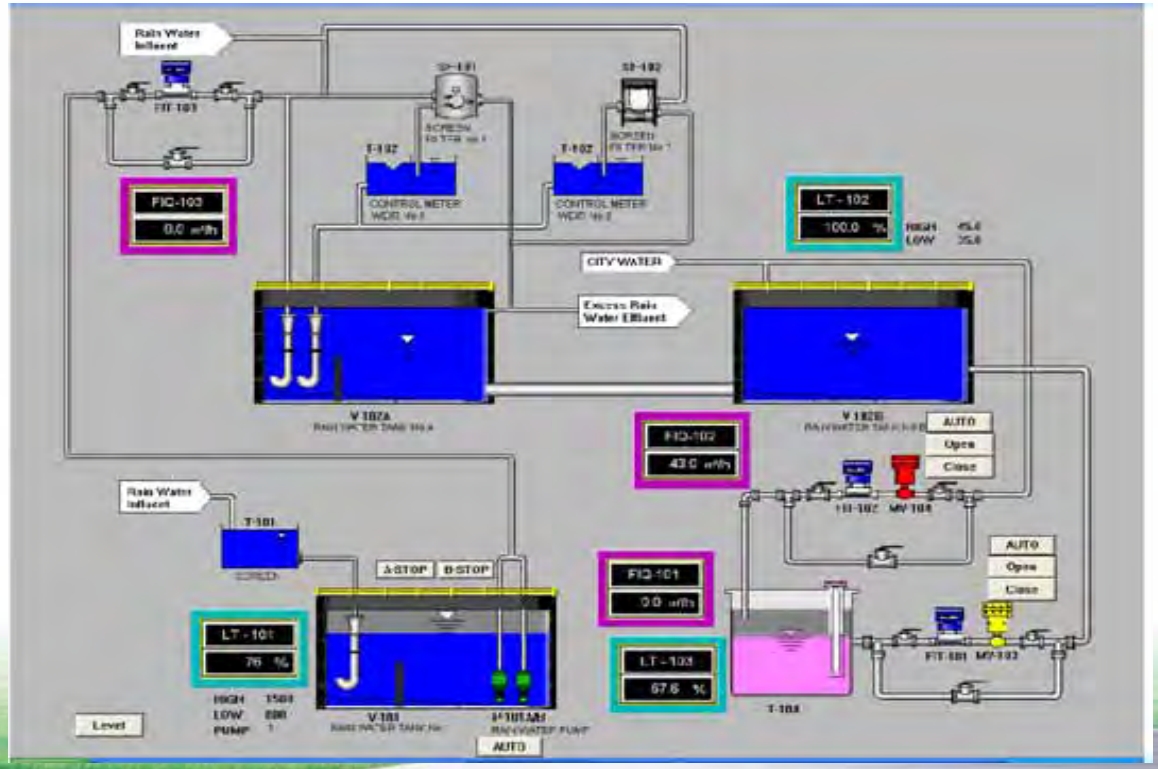


MH

Sewage pipe

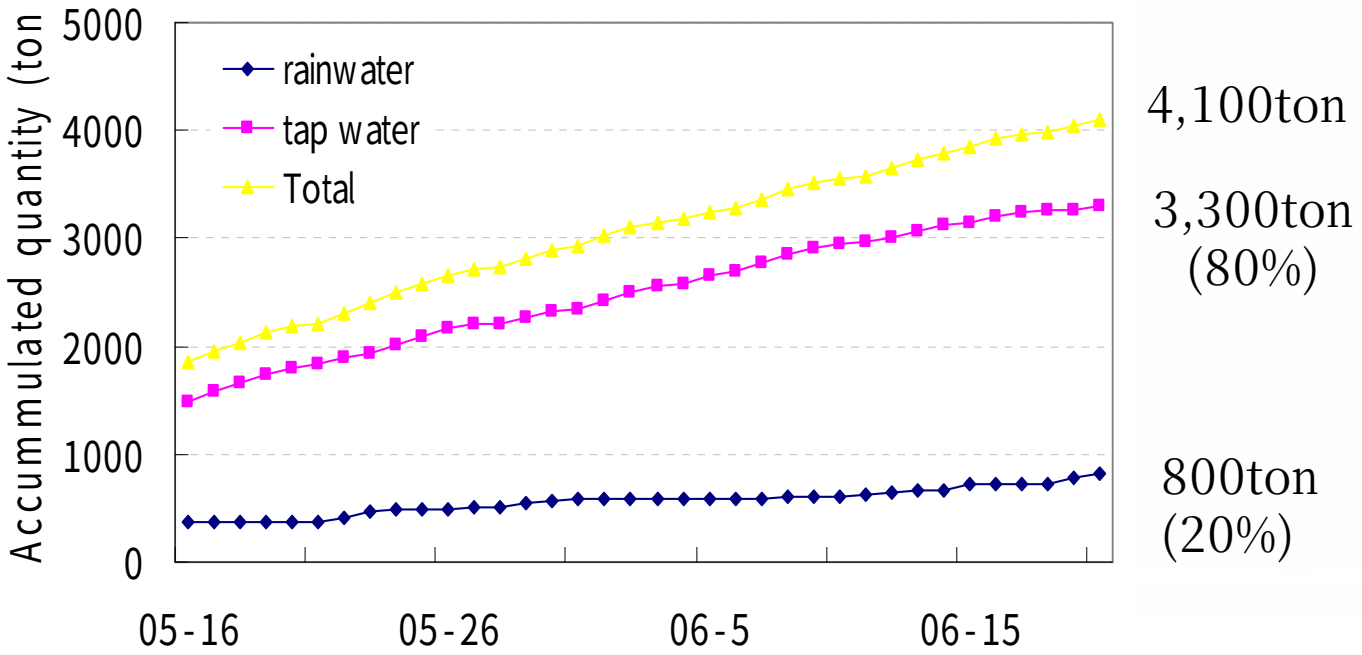
Rainwater Harvesting System in Building 39

- Remote monitoring and control



Rainwater Harvesting System in Building 39

- Rainwater use



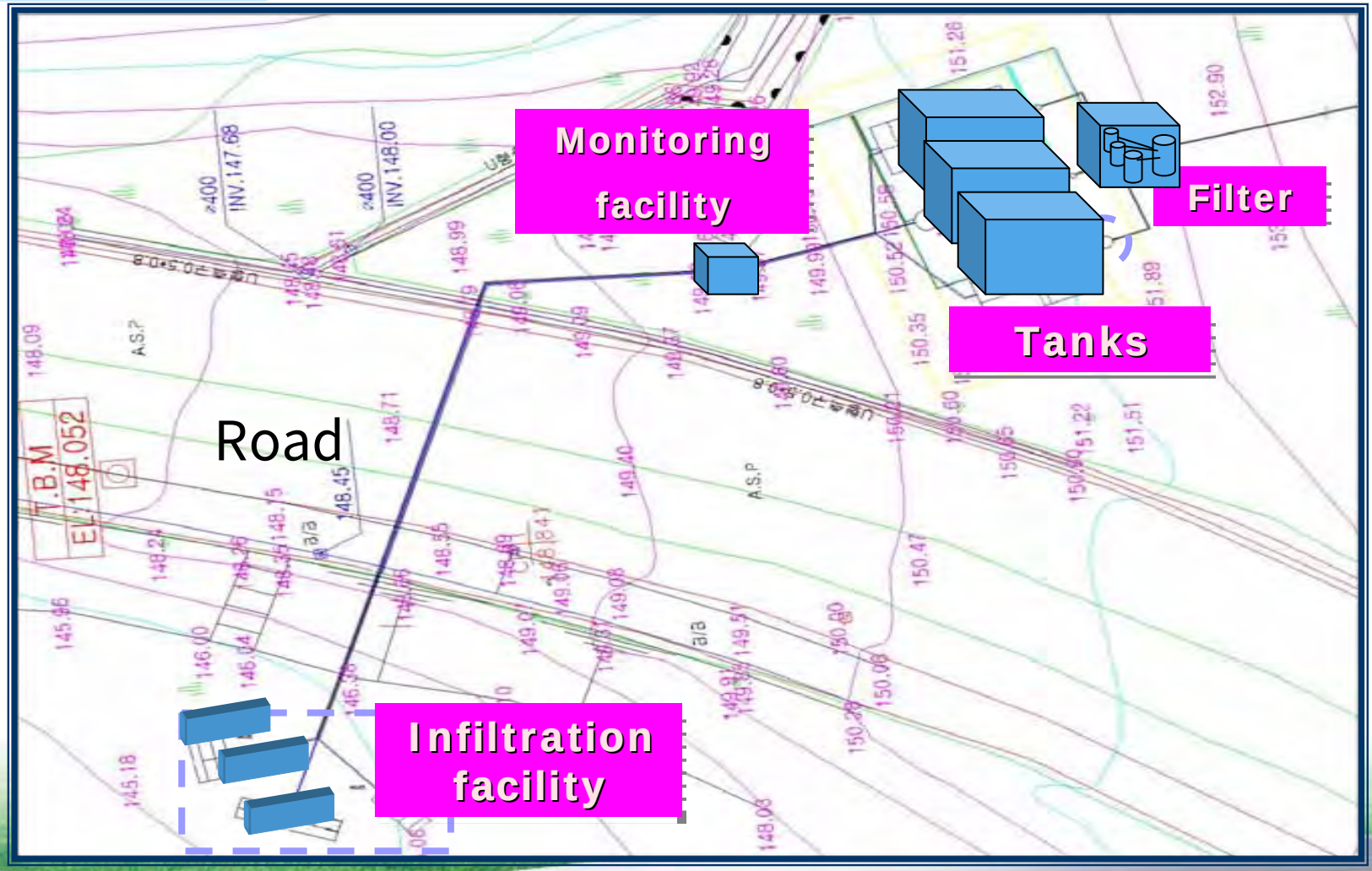
Average use : 80 ~ 90 tons (Mon – Fri)
40 tons (Sat)
20 tons (Sun)

Budlgol Project

Installation Site

Budlgol Project

Outline



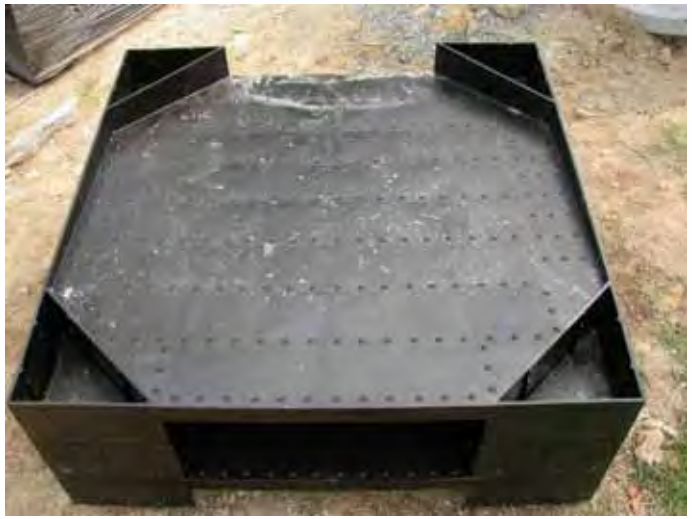
Budlgol Project

Budlgol Project

Q - bic

Budlgol Project

Rainstation

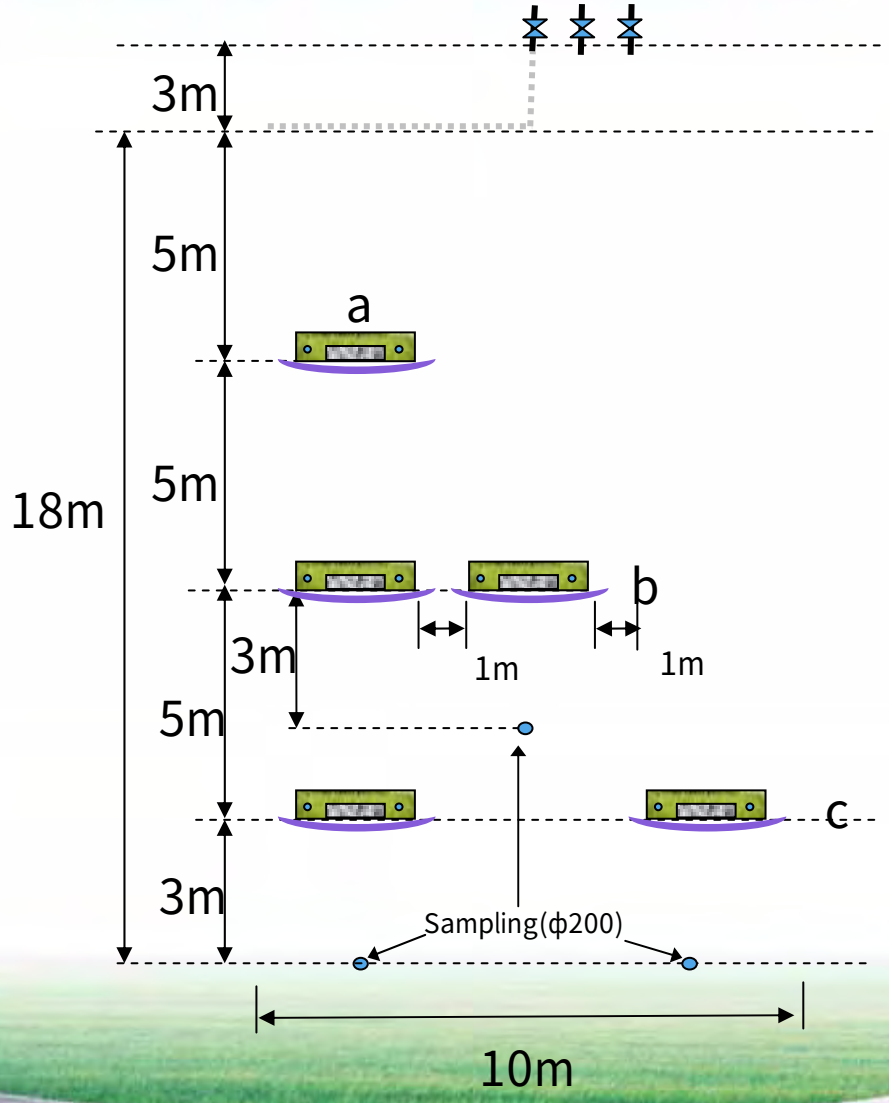


Budlgol Project

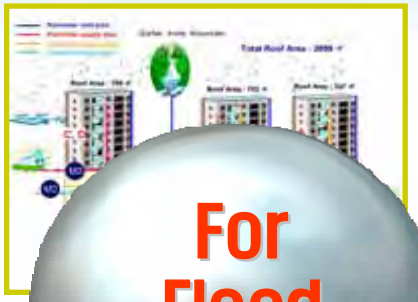
Precast Concrete

Budlgol Project

Infiltration



Eco-campus Project



For Flood Control

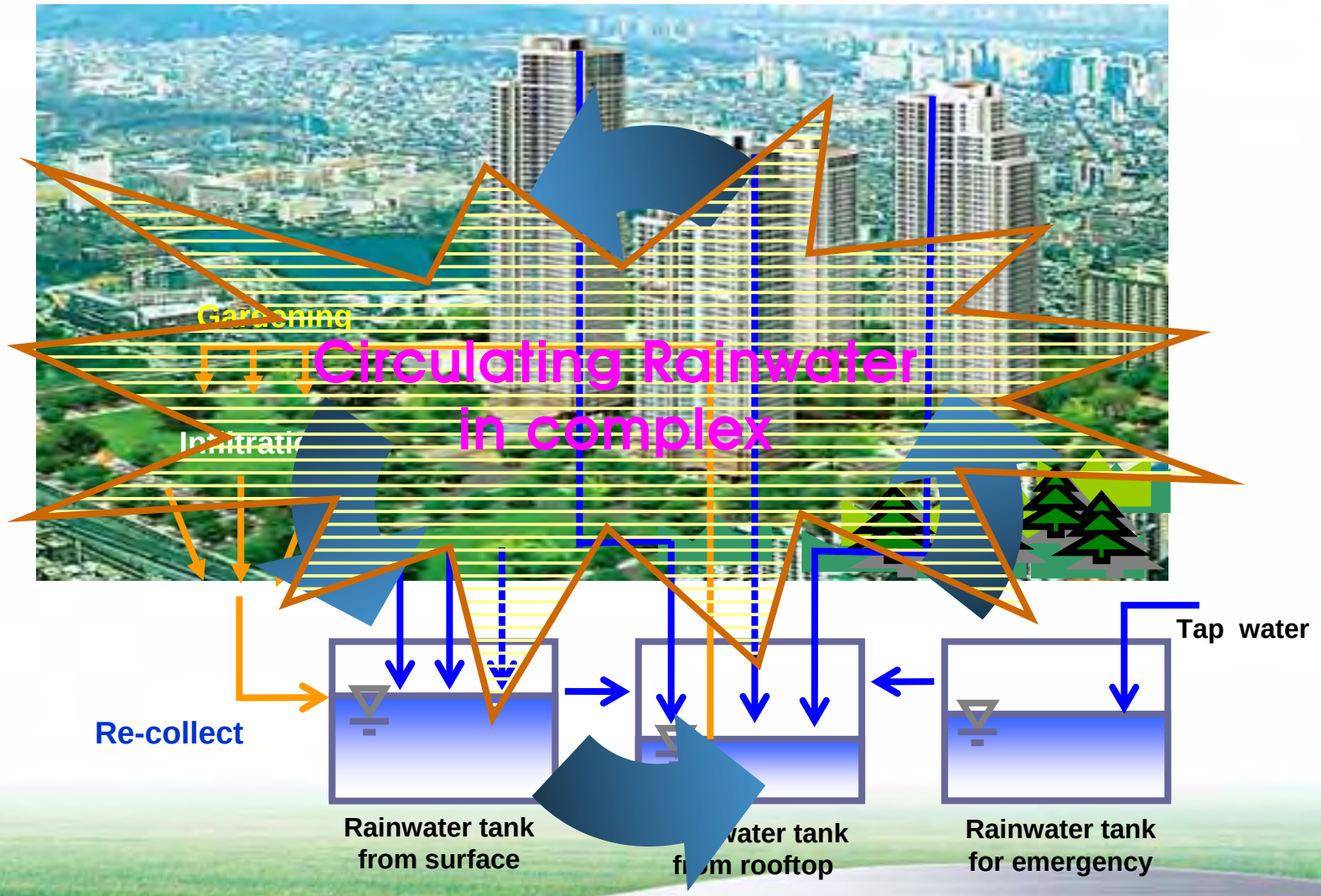
For Water Saving

For Emegency

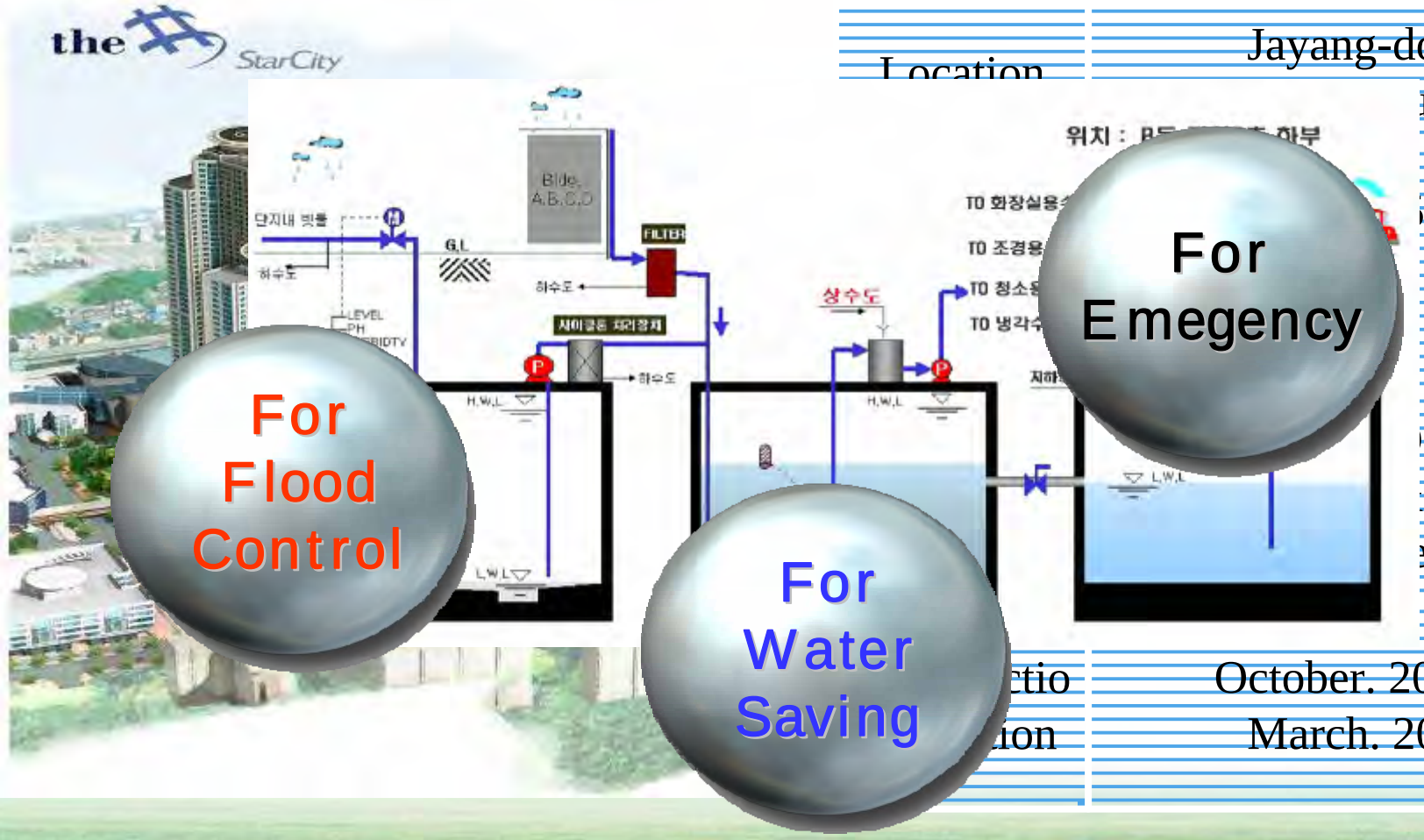
Description of Star-city

Location	Jayang-dong, Gwangjin-gu, Seoul, Korea
Area	Total : 62,500 ㎡ Building : 16,867 ㎡
Usage	Residual & Commercial Complex
Completion date	Nov. 2006

Schematic of Circulation System



Star City Project



Location Jayang-dong
ı Seoul

05.2M^2

7.729M^2

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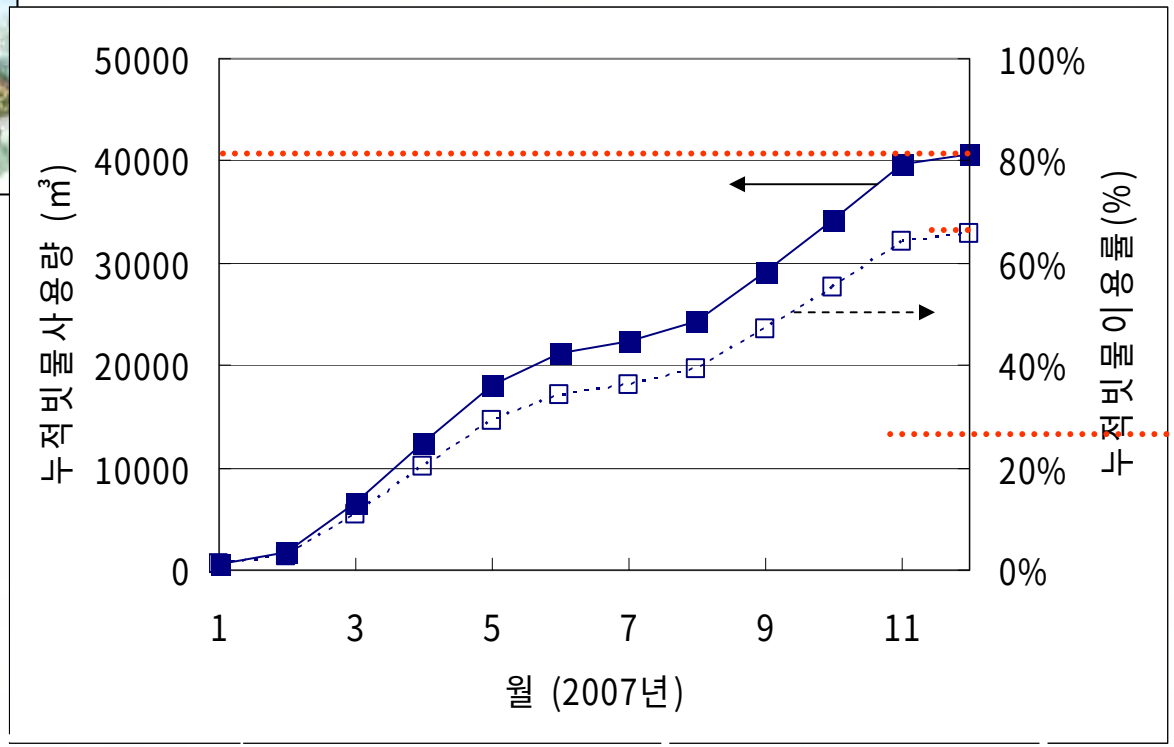
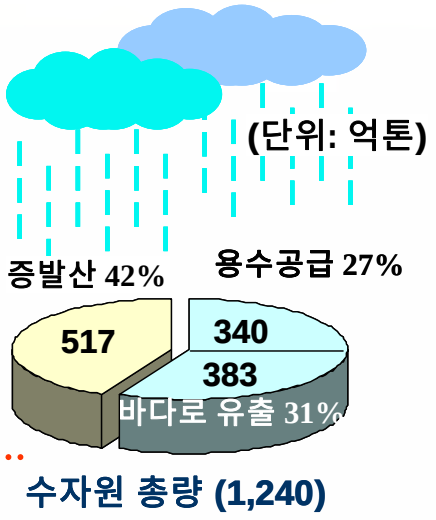
October. 2003 ~
March. 2007

Creative Rainwater Management

Star City RWHM, Seoul

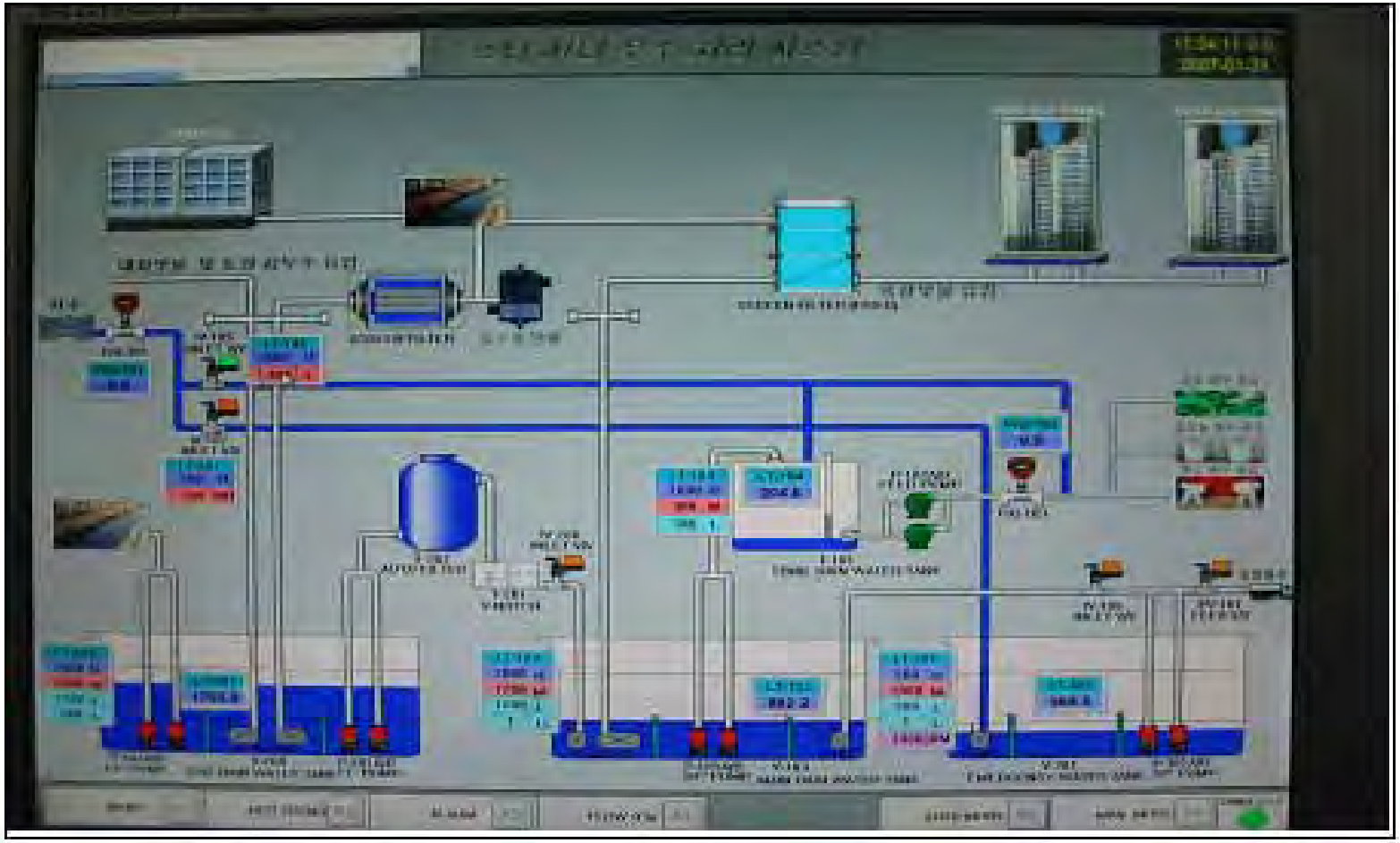




Korean RU Ratio 27%

2007년	Rainwater Usage	40,000㎥
	RU Ratio	66%

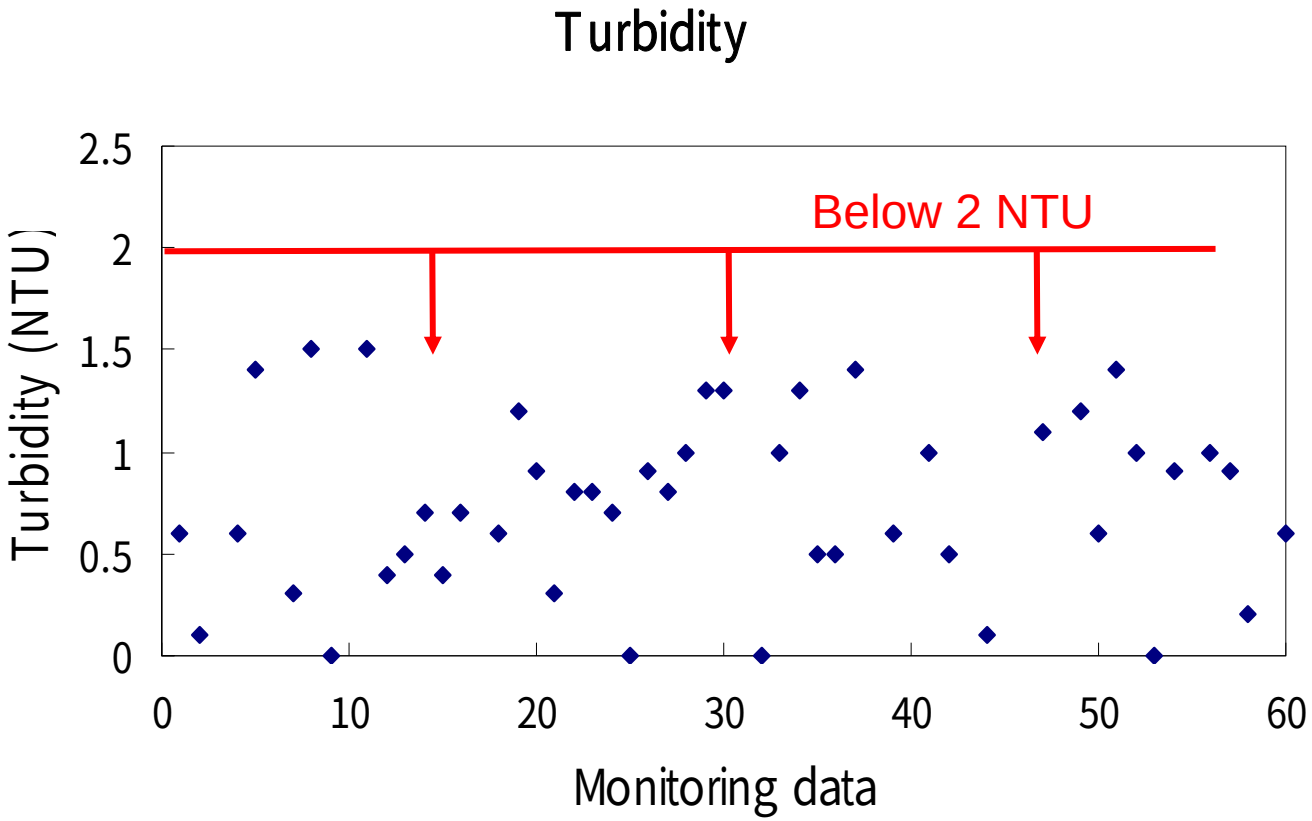
Star City Project



<PLC : PROGRAMBLE LOGIC CONTROL>

Star City Project

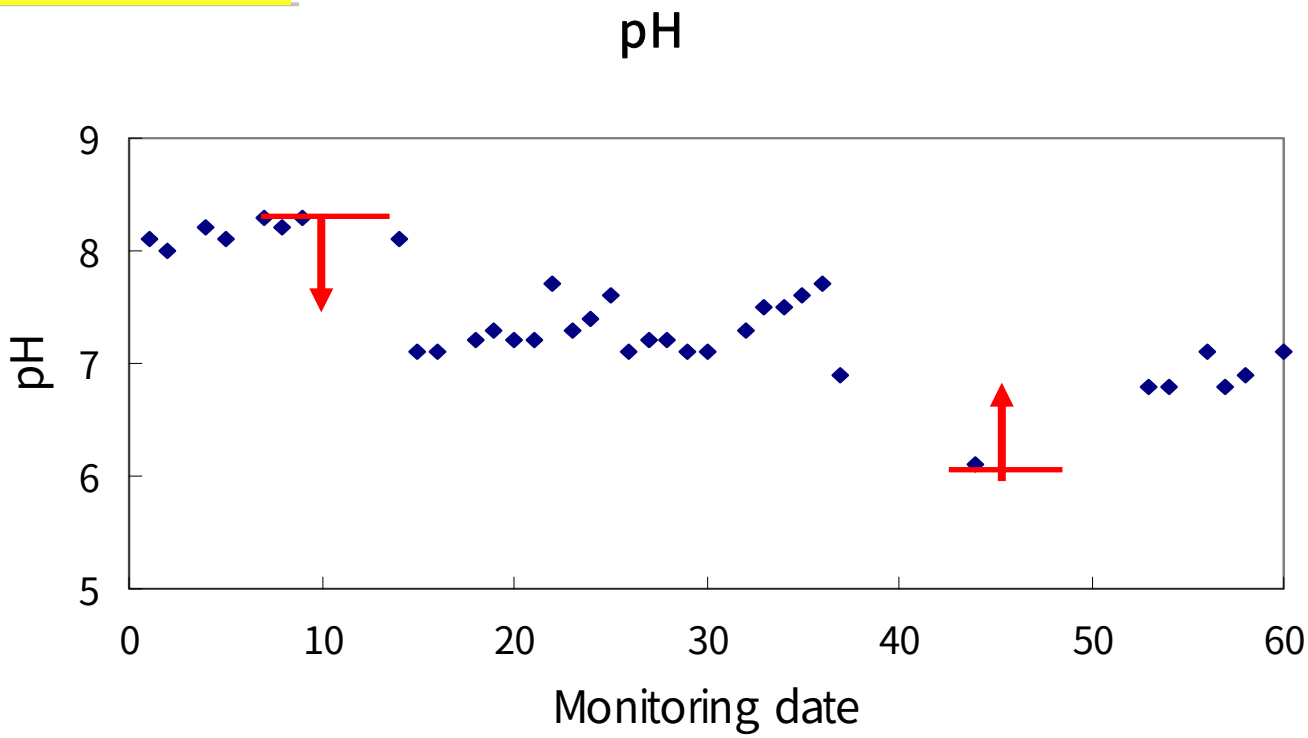
- Quality - turbidity



Stored Rainwater : 0~1.5 NTU

Star City Project

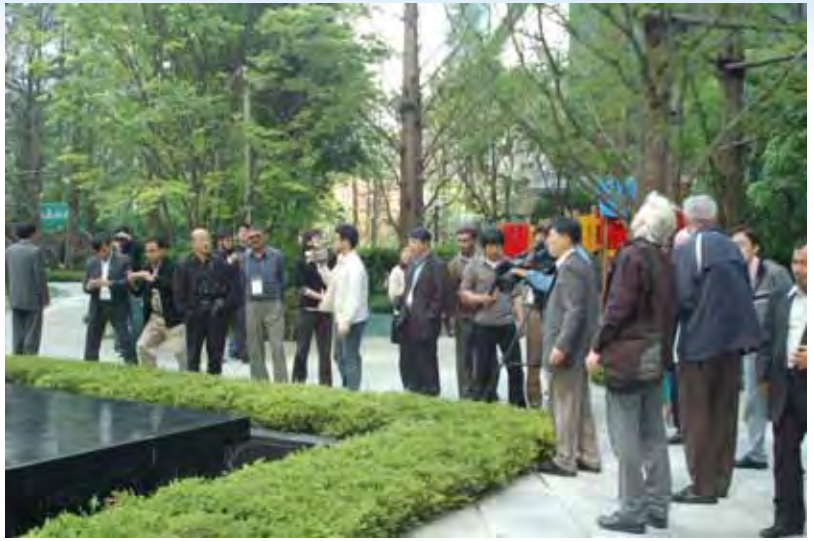
- Quality – pH



Stored rainwater is neutral

Star City Project Technical Tour

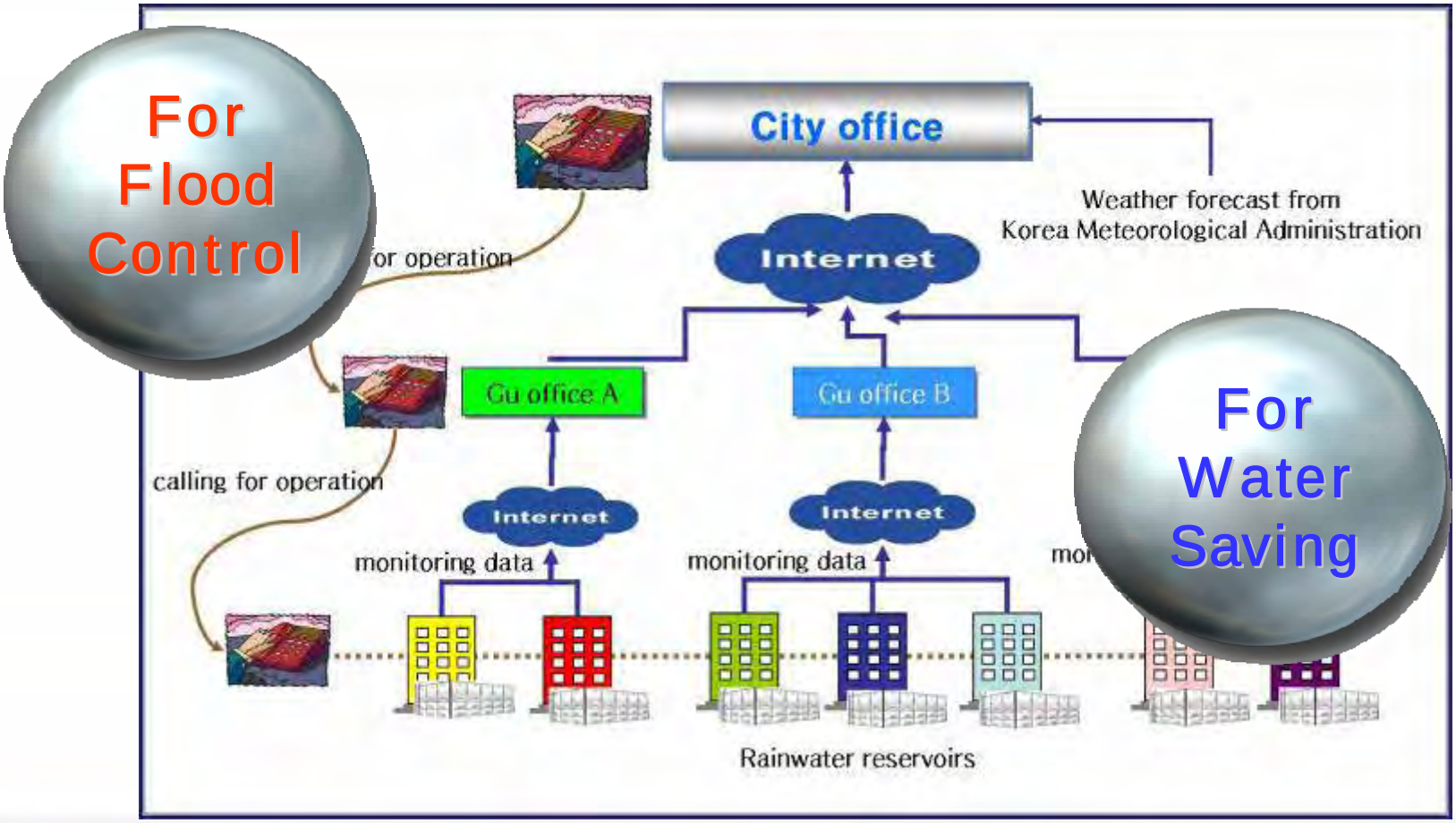
International Rainwater Leadership Workshop, May 2007



People for Rainwater Delegate from Japan, March 1, 2008

Operational strategy of rainwater tank in SMG

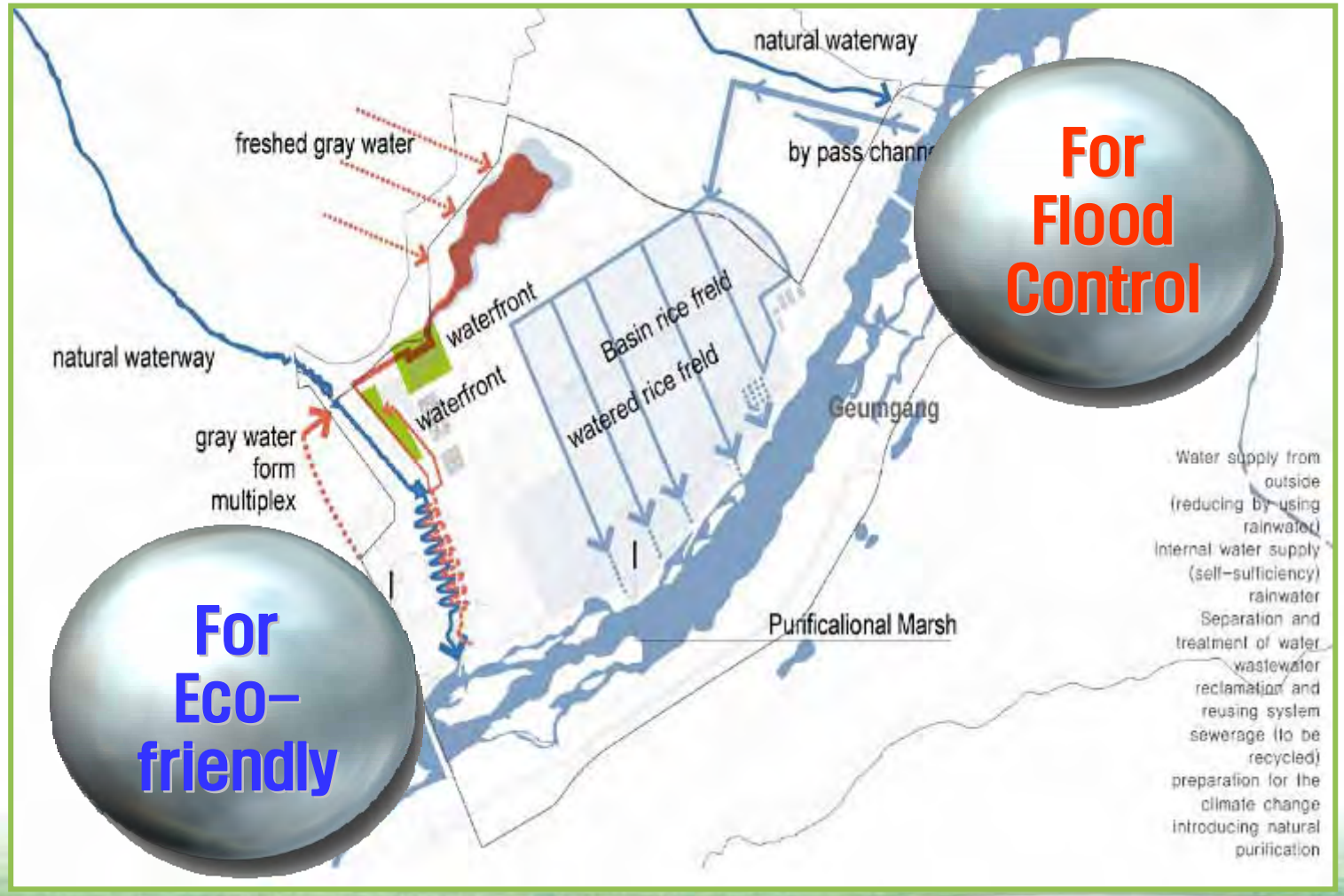
Operational strategy of rainwater tank in SMG



Remote Rainwater Tank Monitoring system

Operational strategy of rainwater tank in SMG

Multifunctional Administrative City



Demonstration of Rainwater Piggy Bank

At: Banda Aceh, Indonesia
On: Jan 2007, Jan 2008
by: SNU Rainwater Research Center and Students

Effect of Tsunami in Banda Aceh, Dec 26, 2004

Tsunami

Rainwater Piggy Bank Project 2

Period: Jan 19-29, 2008 (Project 1: 2007 Jan)

Participants: 18 persons (student, company, Producer)

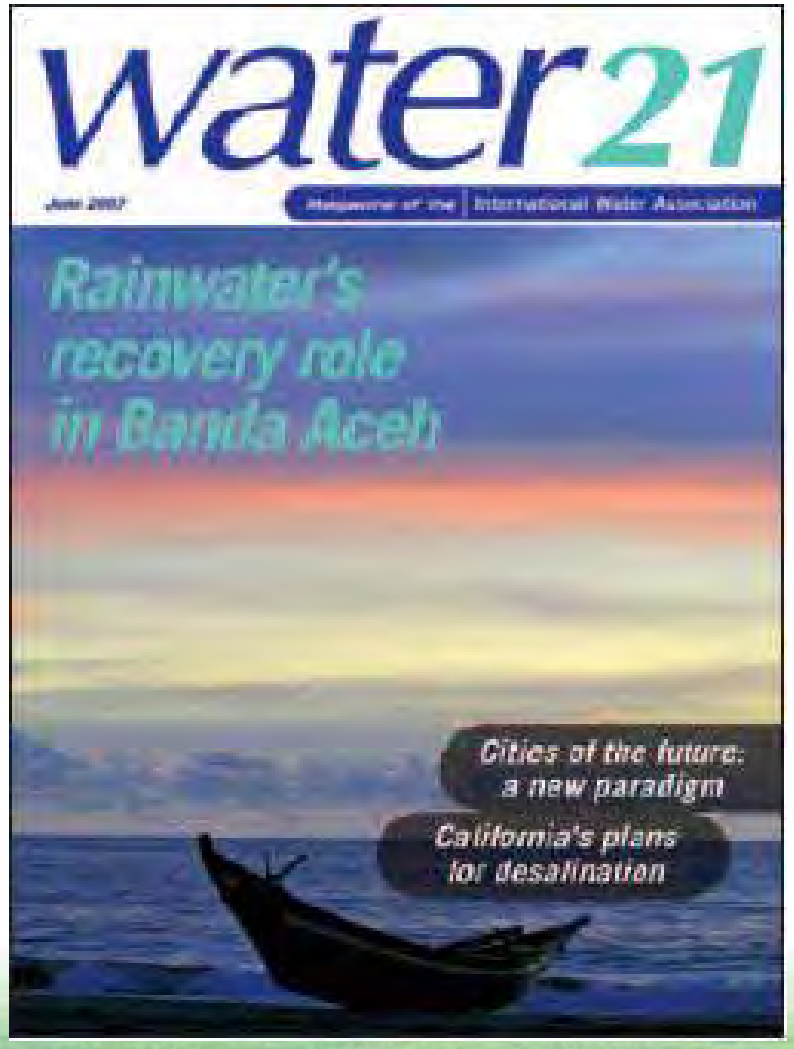
To: Banda Aceh, Indonesia

2.3 Activities of 2007

2.3 Activities of 2007

Rainwater harvesting at a kindergarden

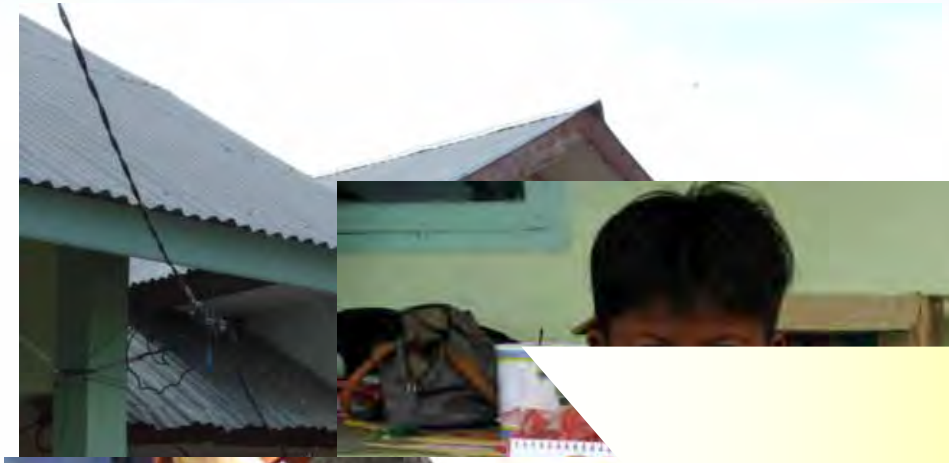
Cover Article of IWA Magazine (June 2007)



1. Water Problems in Disaster area
2. Problems of Water Supply Options
3. Rainwater is the best Option
4. Need to find a new paradigm

2.4 At the Chief's House

2.4 At the Chief's House



2.4 At the Widow's House

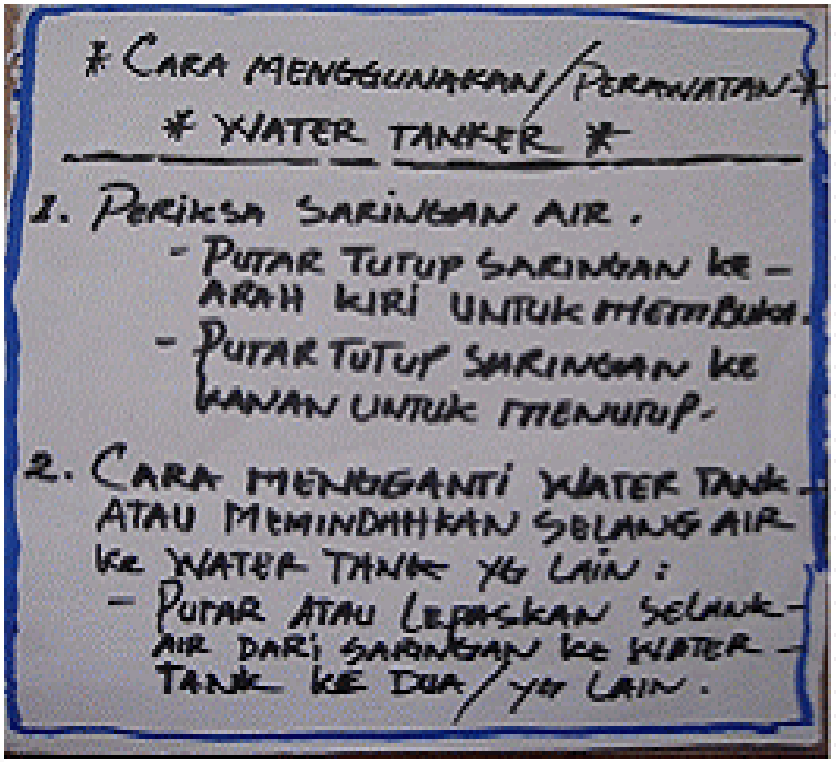
2.4 At the Fisherman's House

Education and Capacity Building

✓Work together with the local people

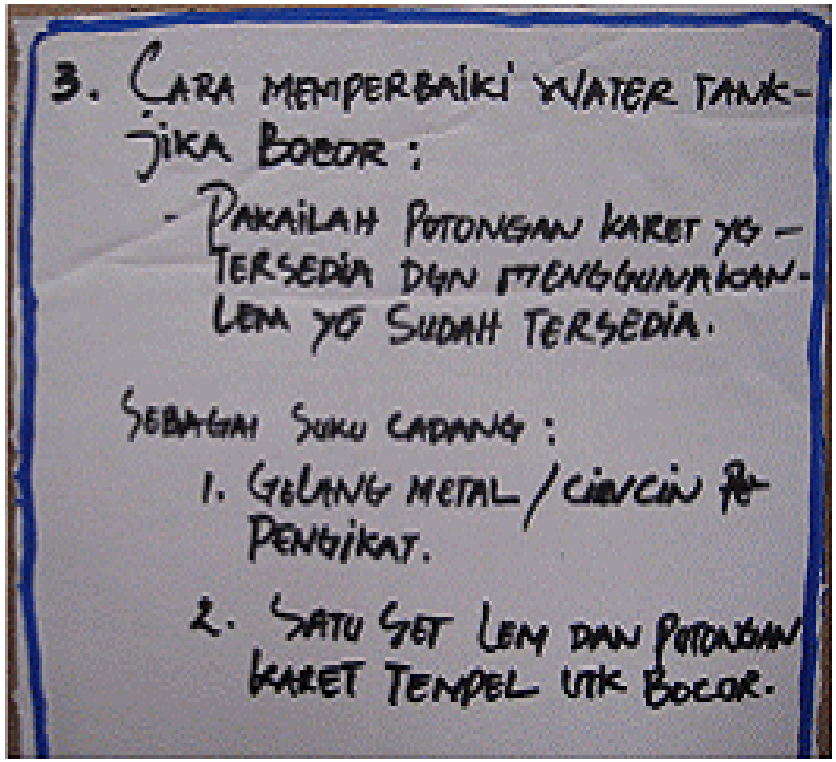
➡ Training and making friends

Education and Capacity Building



* CARA MENGGUNAKAN/PERAWATAN *
* WATER TANKER *

1. PERIKSA SARINGAN AIR.
   - PUTAR TUTUP SARINGAN KE ARAH KIRI UNTUK MEMBUKA.
   - PUTAR TUTUP SARINGAN KE KANAN UNTUK MENUTUP.
2. CARA MENGGANTI WATER TANK ATAU MEMINDAHKAN SELANG AIR KE WATER TANK YG LAIN :
   - PUTAR ATAU LEPASKAN SELANG AIR DARI SARINGAN KE WATER TANK KE DUA/YG LAIN.



3. CARA MEMPERBAIKI WATER TANK-JIKA BOCOR :
   - PAKAILAH POTONGAN KARET YG TERSEDIA DGN MENGGUNAKAN LEM YG SUDAH TERSEDIA.

SEBAGAI SUKU CADANG :

1. GELANG METAL/CINCIN PENGIKAT.
2. SATU SET LEM DAN POTONGAN KARET TEMPEL UTK BOCOR.

<Rainwater Manual by local language>


Thank You !