

The Urban Agriculture International Expo and Conference - 2019.



The Ag-Expo had many horticultural vendors and growing system displays.



There were several examples for self-watering systems including this subirrigated sprout container.



This was a do-it-yourself
single herb growing kit
with LED lighting.



How about a pop-up tent to provide a dark environment for indoor mushroom farming.



There was a self-contained strawberry growing plant factory.



Inside the container was a computer controlled hydroponic strawberry growing system with supplemental carbon dioxide and LED lamps.



Free hats at the Ag-Expo.



The Urban Agricultural International Conference kicked off with an outdoor reception.



The second day of the Conference included an Urban Agricultural tour.



It started with a tour of the Gang Gam-Chan community garden.



Community members could purchase annual plot allotments to grow vegetables.



Plots were very well tended and productive.



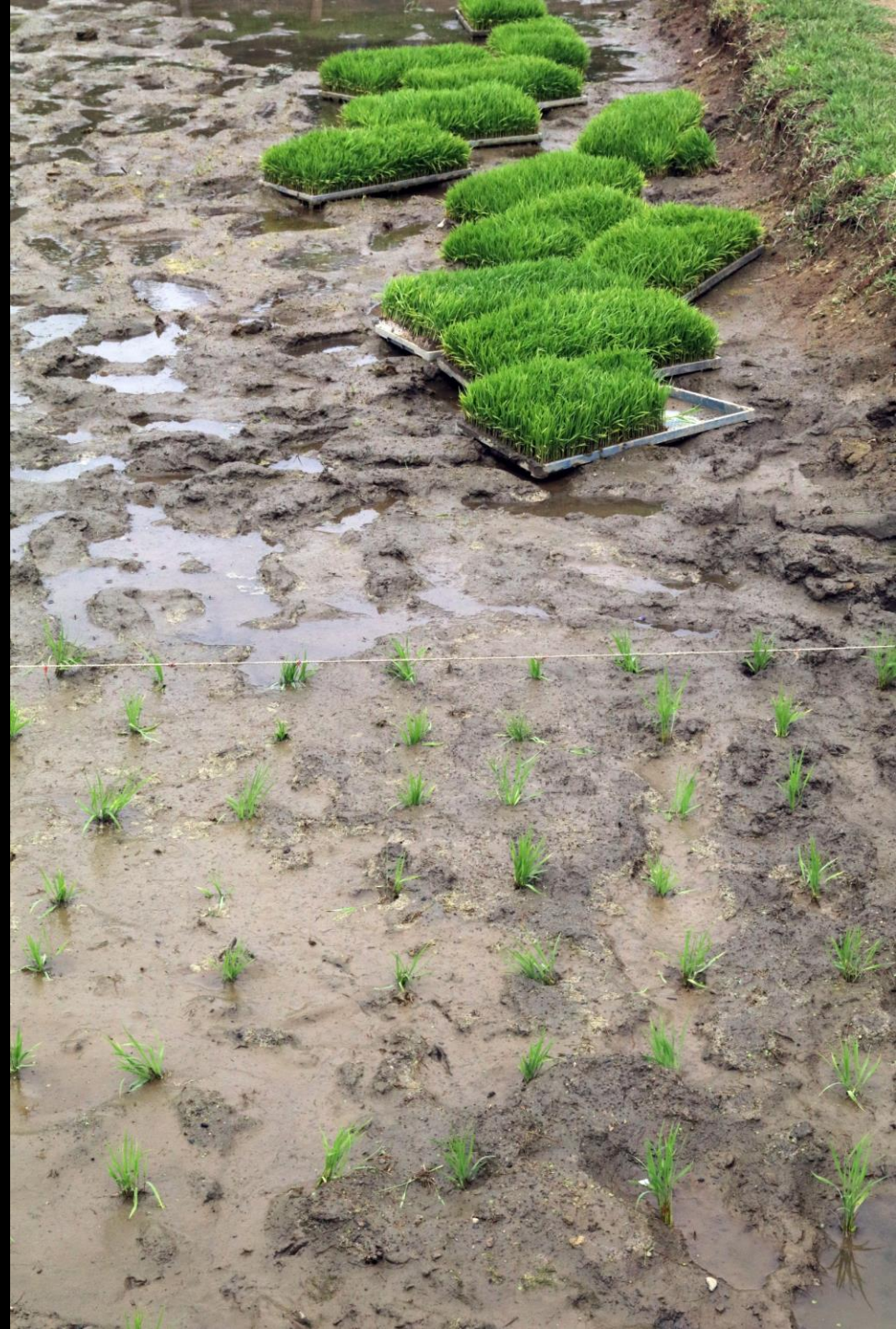
Part of the garden was used for urban planting demonstrations.



The mulching demo was a bit whimsical
using wisteria petals as a mulch.



There was a partially planted
rice demonstration plot.



The group was invited to help plant rice – they were a bit apprehensive.



Into the mud!



In a short time, they were experts.



The next stop on the tour was the Seoul University rooftop gardens where they were creating innovative garden designs.



Everybody Happy Green Roof

Concave Green Roof as Water-Energy-Food Nexus

Prof. Mooyoung Han
Seoul National University, Korea

New Paradigm of roof

1. Utilize the Gift from the Heaven

Water
1,300 mm/year X 2,000 m²=
2,600 m³/year

Energy
1,290 kwh/year X 2,000 m²=
2,582 Mwh/year
(Seoul, Korea)
2. Social Responsibility of a roof

Impact of a Building → **How to reduce it?**

Water : Flooding Energy : Heat island Food : Loss of Vegetation Area

Description of Showcase Project

Location
Building #35 at Seoul National University, Seoul, Korea

Roof area=2000 m²
A,B,C: Flower Garden=420 m²
D,E,F: Vegetable Garden=420 m²

Operation since 2012. 12
Cost: 150,000 US\$

Special feature of this project

1. Concave

Ordinary roof Ordinary Green roof (Concave) This Project (Concave Green roof)
2. Monitoring

Rain Gauge
Temperature
Flow Meter

Benefits

Water Flood mitigation, water conservation

2013. 7. 12-13 *Heavy rain warning (Total rainfall 239mm)

Peak reduction = 30mm(56%)
Peak delay = 3 hours
Total storage = 40 ton

Energy Heat Island Reduction, Cooling Energy saving

2013. 8. 30

Maximum Difference = 24°C
47.9°C
23.9°C

Food Organic vegetable, Honey

Communication

Various Activities

Nice Scenery

Replication Potential

- Minimum operation cost.
- Seoul, Daejeon City made Ordinance to subsidize the cost of green roof.

Conclusion

This Concave Green Roof showcase is a model for the futuristic urban water management as a strategy for climate change adaptation.

2014 ENERGY GLOBE
The world award for sustainability

The vegetable garden included raised beds and reflective fencing.



This building included a water garden.



One of the University buildings with an eating area that included a water feature.



The design also included a rooftop aviary.



We then made a short stop to a fresh produce retail shop called Singing Drim. It was an outlet for local growers using sustainable urban farming practices.



For lunch we visited the community garden of Meyong Neighboring Park.



The community education center had a kitchen where they prepared our lunch.



Before lunch, we had a chance to
make a form of salad kimchi.







In the afternoon, we visited a bonsai nursery.



It was a large nursery with bonsai at all stages of development.



In addition to traditional bonsai, they produced miniature tray gardens.



The tour day ended with a dinner hosted by the conference organizer.



Everyone in attendance had an opportunity to introduce themselves and share their Korea experiences.

Jeong An was from Kentucky and helped organize our conference experience.



Jaechun Han was our host for dinner.

Sumi and Zoe's chance to share.



They had a banner
printed to thank the
Kentucky delegation
for participating in
the Conference.

