

Designing Nature Into Modern Society

-Reimagining Nature-Inclusive Urban Design-

1 Motivation/Purpose

Nagano Prefectural
UEDA Senior High School



Streets and houses are becoming **dull** and **monotonous**

We need **design** to incorporate **nature** into society

2 Previous Studies



Shared Planter/bed upkeep^{*2} (Ueda city, Nagano)

- The city provides planter & bed and residents co-manage them.
- Their cooperative spirit and the environment can be improved.



"LIQUID3"-photosynthesizing bench^{*3} (From Serbia to the world)

- Tank is filled with algae, which change CO₂ into O₂ by photosynthesizing.
- It replaces one adult tree/200m² of lawn.
- Algae can be used as fertilizer.

3 Implementation

Hanging Living Green Screen



Usual one



Our plan

- Blocks the sunlight earlier than normal
- Grows downward due to gravity
- Stored rainwater can be used to grow
- Smart, planter-free design

Prototype



Advice

Dr. Takanori Kuronuma (Chiba Univ.)

- Roots may be stuck and rot
- Roots may penetrate the gutter
- Gutter should be slanted
- Ivy can be used^{*4}

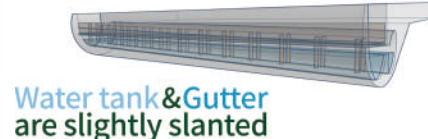
Final Design



Ivy (*Hedera rhombea* Beam)

- Stands cold, heat & shade
- Grows all over Japan
- Suits downward growth^{*4}

4 Conclusion



Source/Contributor

^{*1}: Taken by old friend, C.M. ^{*2}: Ueda city, Department of Urban Development, City Planning Division

^{*3}: LIQUID3 DOO Beograd. "LIQUID3 - Urban Photobioreactor". <https://liquid3.rshttps://liquid3.rs>, (Accessed 6 Dec.2025)

^{*4}: Yongjin Park, Takeshi Okinaka. "A Study on the Growth Characteristics of Main Adhesive Climbers in Climbing and Hanging type". Zouen-zasshi, vol.53, 1990, pp.115-120.