

Technical Aspects of Urine-Diverting-Dry-Toilets (UDDT)

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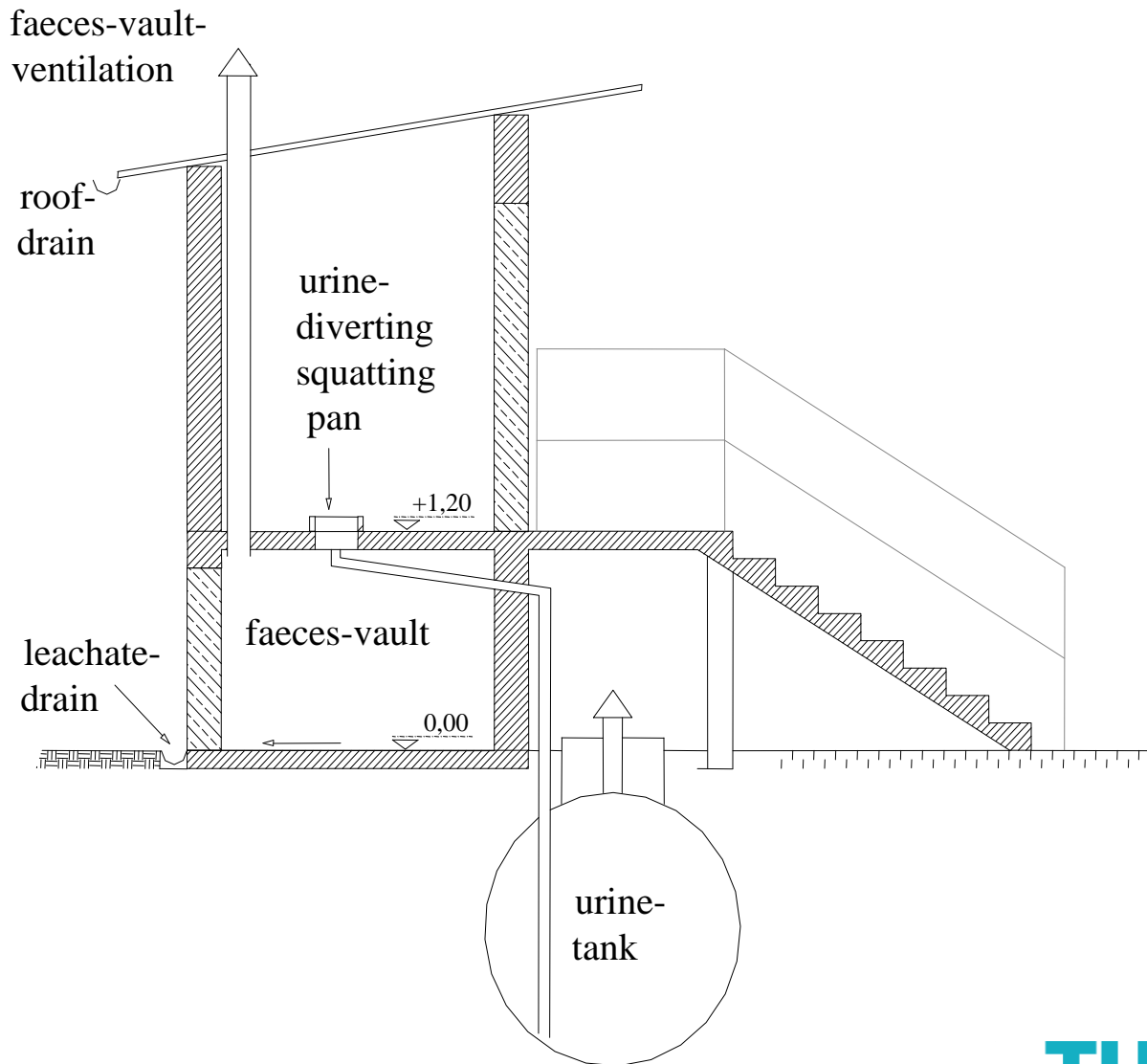
**Kiev
November 6th 2007**

Topics

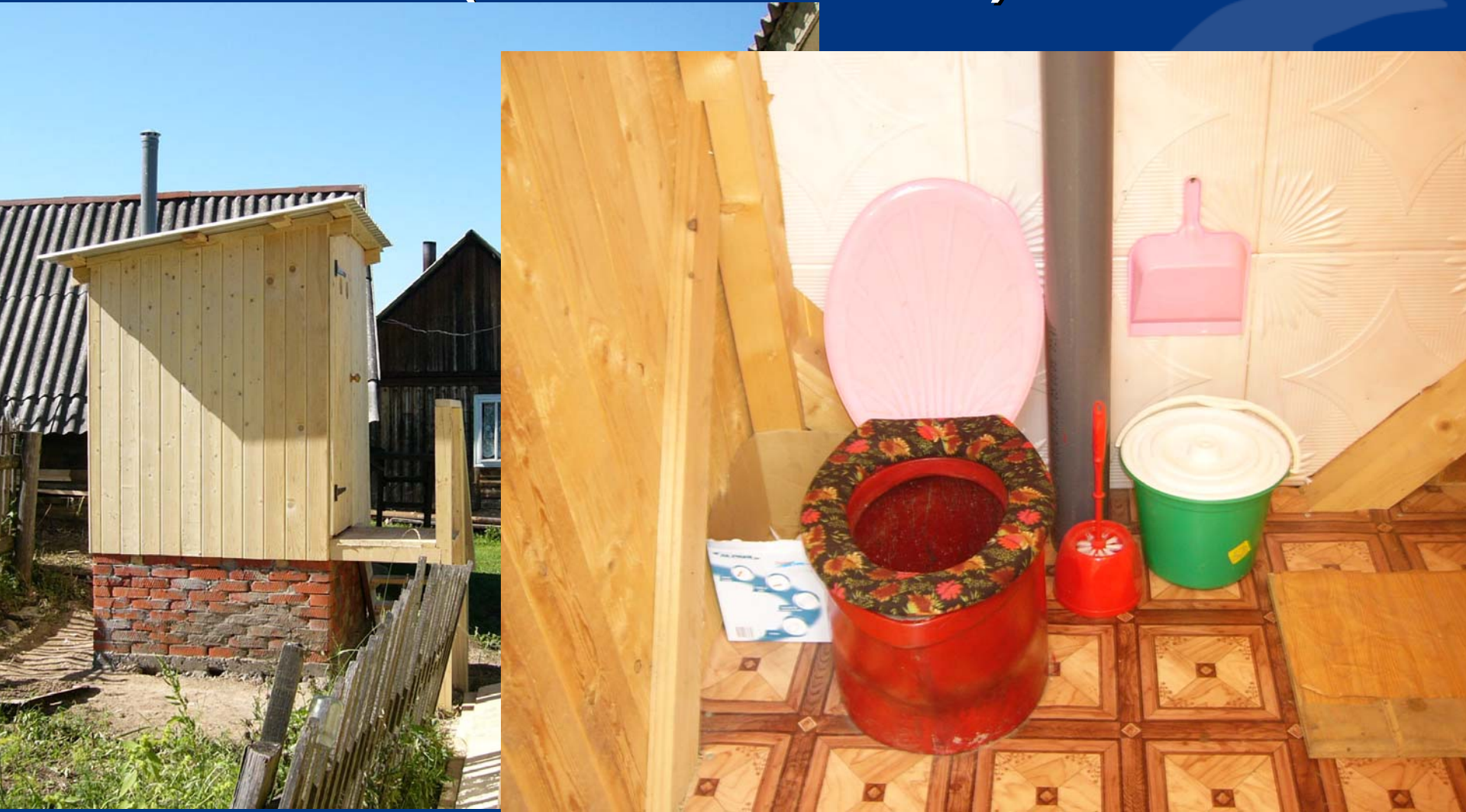
Construction of UDDT:

- Construction Materials
- Location: Inside / Outside / Attached
- Faeces-Vaults: Single- / Double-Vault; with / without container
- Urine-Collection: Canisters / Tanks
- Covering Material: Ashes / Soil / Sawdust
- Ventilation: Active / Passive; separate / joined
- Urine Diversion: Seats / Pans and Waterless Urinals

Urine-Diverting Dry Toilet



First Household UDDT in Ukraine (bricks and wood)



Household UDDT in Romania (homemade concrete-bricks)



Household UDDT in Uzbekistan

(clay-bricks/clay on woodframe)



Household UDDT in Uzbekistan

(clay on woodframe)



Household UDDT in Ukraine (natural stones)



UDDT in Mexico



Double Vault in Ukrainian School

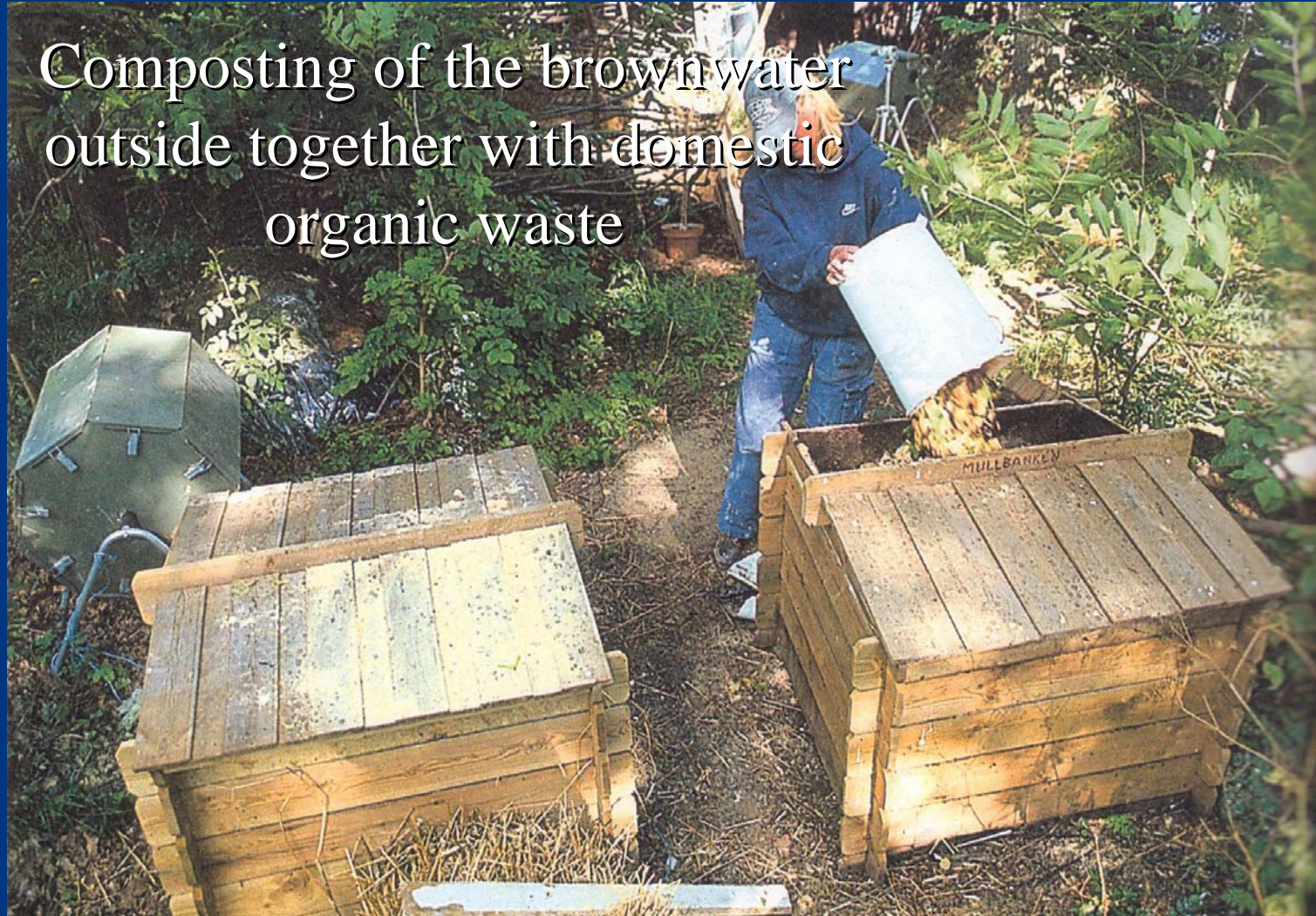


Single Vault-UDDDT in Ukraine



Composting of faeces

Composting of the brown water
outside together with domestic
organic waste



Decomposition of faecal matter by worms



Urine-Collection for Households in Canisters



Problems: Storage in Winter/Freezing

Household UDDT inside the house in Armenia (under construction)



Urine-Tanks for a school in Linz, Austria, Linz AG



OtterWasser
GmbH

aww

Institute of Wastewater Management
and Water Protection

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Two chamber Urine-tank



Toilethouse in Romanian School



Urine-Tanks protected e.g. in basement



Containers suitable for Urine-Storage



Ventilation for each Vault



Separate Ventilation-Pipes



Joint Ventilation-Pipe with Rotor



Handwash-Facilities



UD- Dry Toilets from Philippines





Meilong
Ceramics,
China

Dry Toilets with Urine Diversion



[Kathmandu, enpho.org](http://Kathmandu.enpho.org)

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Institute of Wastewater Management
and Water Protection

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UD-Toilet with children seat



BB innovation, Sweden

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Urine Diverting Toilet from Concrete



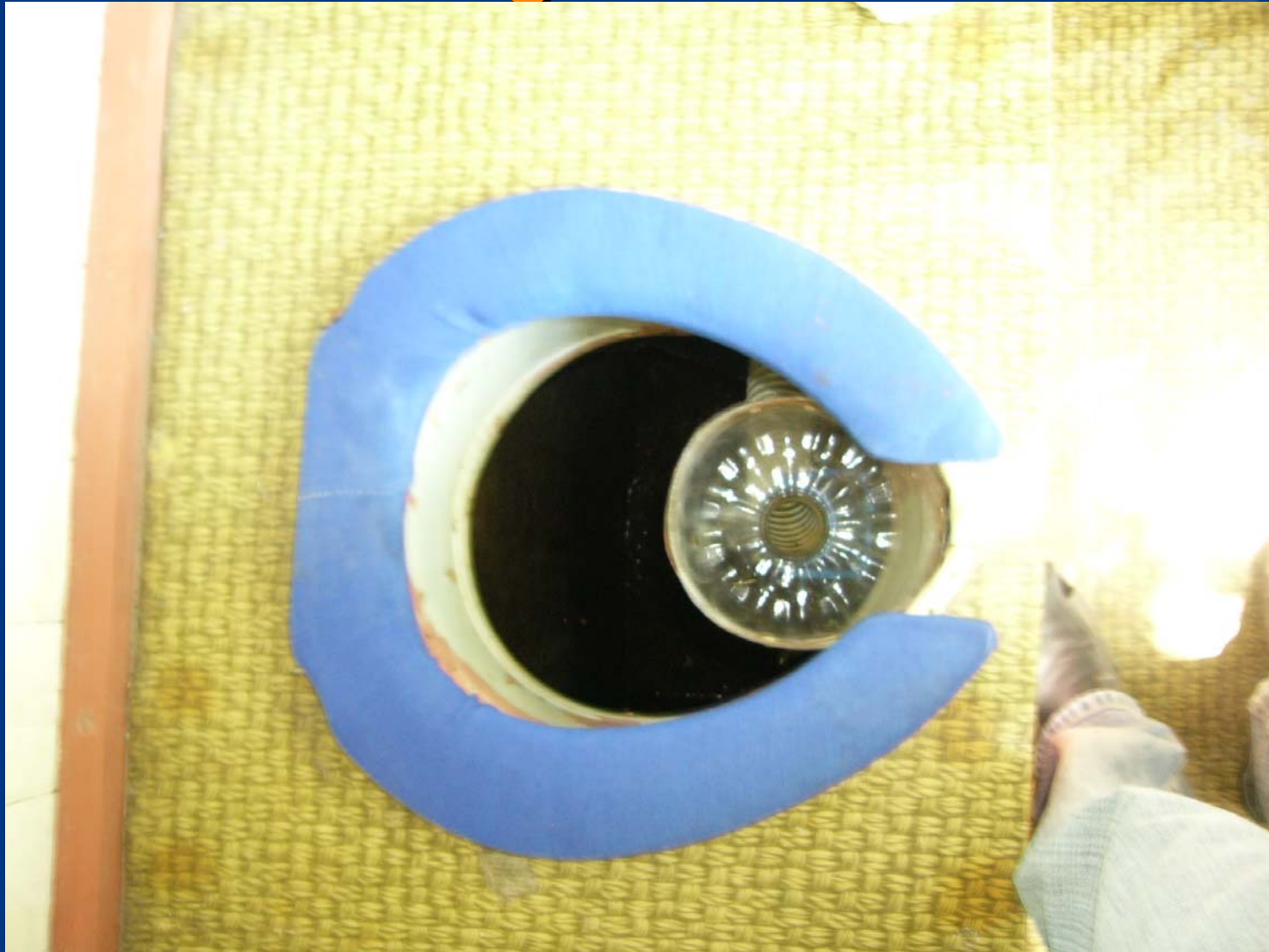
Urine Diverting Toilet from Concrete



Self-Made Urine-Diversion



Retrofitting old Pit-Latrine



Waterless Urinals - before



Waterless Urinals - after



Waterless Urinals in school



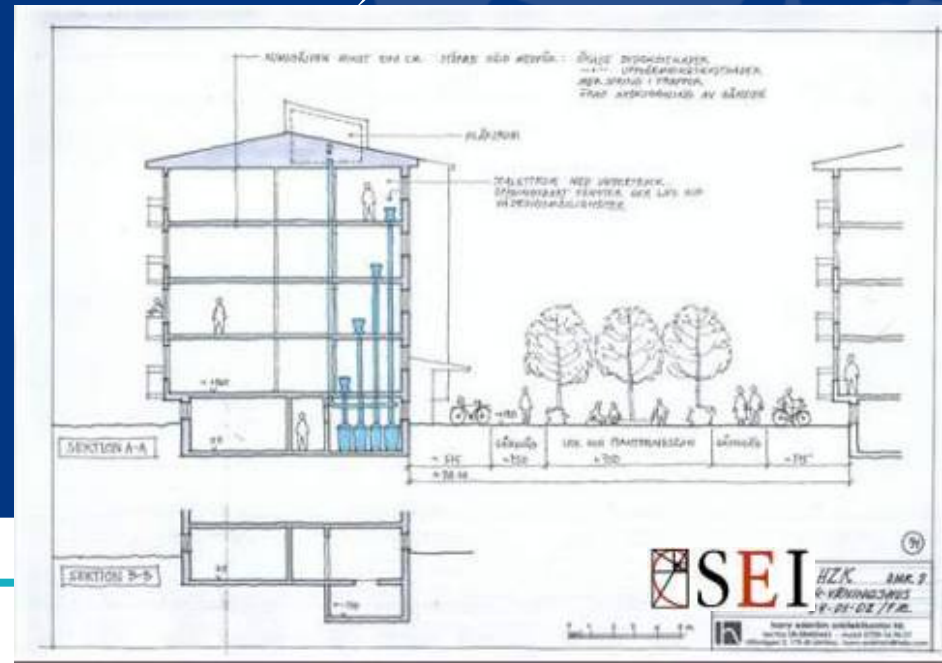
Low-Cost Urinal



UDDT in multi-story apartments in Dong Sheng, China (SEI)



(EcoSan Res/
A. Rosemarin 2005)

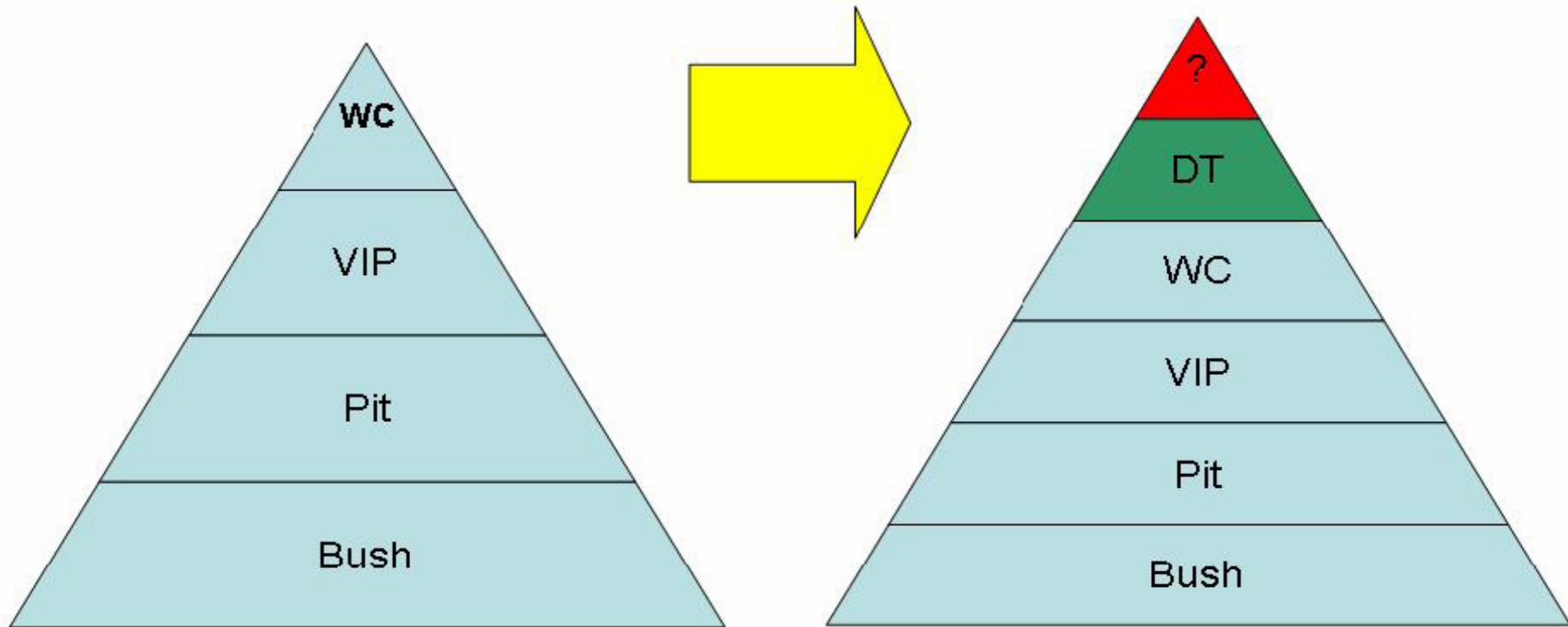


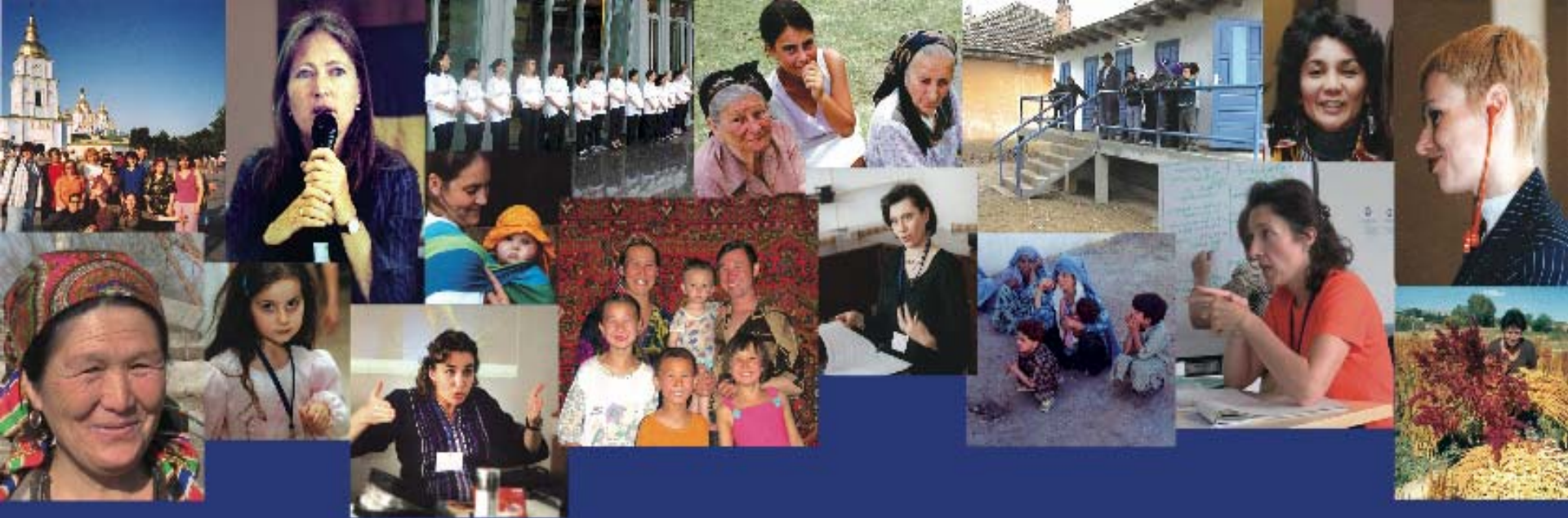
Settlement ‚Allermöhe‘, Hamburg

Retrofitting Urine-Diversion:



In search of a new paradigm: from Water Closet to Sustainable Sanitation





Thank you!

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