

Water in Urban India

Future growth of our cities



PLENARY SESSION – AQUA ACCESS

Presenter - Mrs. Savita Punde Partner, Design Cell

The GRIHA Summit 2015

12th, March 2015

Water supply



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Sources of water

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- ⊕ Local rivers, lakes and tanks.....
POLLUTED
 - ⊕ rain water over settlements.....
WASTED
 - ⊕ Ground water.....
DEPLETED – HIGH MINERAL CONTENT
 - ⊕ Remote water sources.....
HIGH COST – MAY DEPRIVE LOCAL COMMUNITIES
- Recycled water, desalinated water.....



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CP Tank, water tank for supplying drinking water to Gurgaon, South Mumbai

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Park Guell plaza, spain



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Torico Plaza, Spain



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Nardulla tank, Prabhadevi, Mumbai

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Changing distances of source :Delhi

⊗ Local Stepped wells

⊗ To Tehri dam:300 km



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Mumbai

⊗ Local tanks

⊗ To vaitarna:120 km



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Issues with remote source

- ⊗ Unable to meet growing demand as urban population increases
- ⊗ Higher costs of transportation
- ⊗ Infringement of rights of local people over local resources



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Way forward

CURRENT PRACTICE

- ⊗ FIRST PRIORITY: local rivers, lakes, remote water source
- ⊗ SECOND PRIORITY: ground water
- ⊗ THIRD PRIORITY: recycled water

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Shortcomings of current practice

- ⊗ Surface water (lakes, rivers) could be contaminated with pollutants, fertilizers, pesticides, chemicals etc.
- ⊗ Ground water generally has high mineral content. Over drawing could lead to depletion of water table.

RAINWATER COLLECTED WHERE IT FALLS IS EASIER TO TREAT AS IT IS RELATIVELY CLEANER THAN SURFACE AND GROUND WATER

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Reorganizing our priorities

- ⊗ FIRST WATER: Catching rainwater where it falls
- ⊗ SECOND WATER: Recycled water
- ⊗ THIRD WATER: Local rivers and lakes
- ⊗ FOURTH WATER: Ground water
- ⊗ FIFTH WATER: Remote source

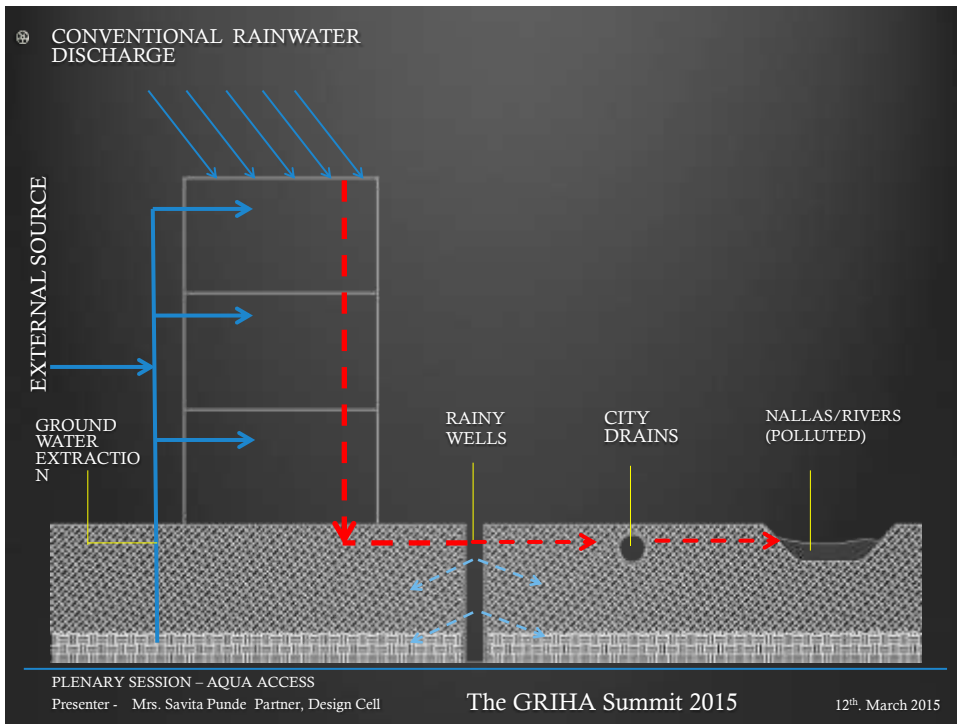
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Way forward: looking within the city



DRINKING AND COOKING WATER REQUIREMENT

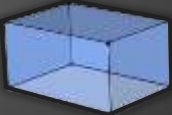
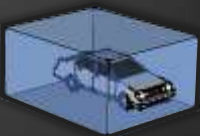
 = 10 litres per person per day *

 = FOR FAMILY OF 5
 $10 \times 245 \times 5 = 12250$
 litres/p/annum

VOLUME FOR ONE BASEMENT CAR PARK
 $= 35 \times 2.7 = 94.5$ cu.m.
 One car park=8 families drinking and cooking annual needs.

CAN WE MAKE WATER ATLEAST AS IMPORTANT AS CARS?

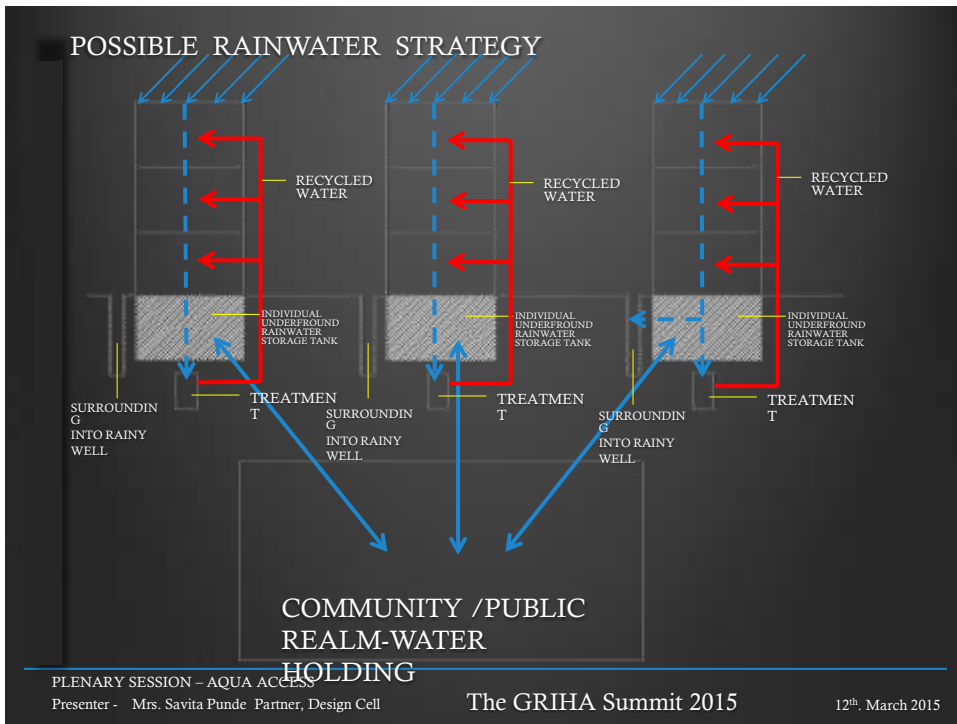
* C.S.E.

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Using city open spaces to build
resilience and resource

Massive New Storm-Protection Barrier Funded for Lower Manhattan



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- ⊗ The cities landscape structure needs to be seen as infrastructure essential for the cities functioning and as a instrument of resilience .
- ⊗ This objective may call for some important processes of reclaiming territory that has been lost to encroachments or inappropriate decisions.
- ⊗ Today there are enough instruments within the frame work of legislation through transfer of development rights should the state consider the landscape of a city as a important working infrastructure and needs to reclaim some critical ground.

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Restoration of Chonggyecheon river, Seoul – korea



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Conclusions

- ⊗ We need to reinterpret some of our traditional practices to meet new challenges
- ⊗ The issue of water source and therefore holding systems within projects is critical and non negotiable. This must find a place not just in rating systems but may soon need to be integrated in urban regulations.
- ⊗ The urban landscape needs to be seen as critical infrastructure, and in some cases regaining territory to reclaim the city's green infrastructure may be critical and need serious intervention.

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