

My Well My Life in Bengaluru

Submitted by

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‘Million wells for Bengaluru’ campaign

Biome conceived the campaign for a million wells in Bengaluru in 2015. The essence of the campaign is to encourage groundwater recharge through

- communication - by raising awareness and providing information, and
- facilitating action - getting the city and its residents to dig or revive a million recharge or open wells

Recharge wells will send rainwater back into the ground, and open wells that hold water could be used as sources of water while also recharging the groundwater. These wells also represent the livelihoods of well diggers and plumbers in a smart city transitioning to a green economy.

More details about the campaign are available at

<http://bengaluru.urbanwaters.in/about-the-million-wells-campaign/>

‘Million wells for Bengaluru’ campaign

It is estimated that Bengaluru has around 200,000 wells. Biome has been documenting these wells on a well map

<http://bengaluru.urbanwaters.in/well-mapping/>

Some examples of wells that are in use in Bengaluru are documented in the following slides

Mr Balasubramanian has a 40 feet deep well. He recharges the well by filtering and channeling rooftop rainwater into it. His well gives him the entire year's water requirement.

Individual house with open well



Wells to manage basement seepage - Safina Towers

- Multi-story office building with upper and lower basements had seepage almost since it was constructed - lower basement had almost 1 foot deep water - repeated waterproofing did not help
- Subsurface flow of water from the elevated National Military Memorial Park to the south was the most likely cause of the seepage
- Biome recommended digging wells at the southern border of the site to intercept the subsurface flow of water and hold it in the wells
- Safina Towers dug 3 wells, one each at the eastern and northern boundaries and one between the two buildings
- The wells were 6 ft wide and 35 ft deep and water was struck at 18-20 ft
- The water from the wells was used for gardening and after quality testing, was pumped up to the overhead tanks - upto one lakh litres a day is pumped out from the wells
- On visiting Safina Towers one year after the wells were dug, it was seen that the basements were completely dry



Open wells as a water source for industrial use - Rail Wheel Factory



- The Rail Wheel Factory is a zero-discharge campus - they don't send out any effluents and also filter the dust out of the furnace air
- They have a huge need of water for industrial cooling, which was met by Kaveri water and treated wastewater from BWSSB
- Since the groundwater table in the campus is high, RWF dug 5 open wells (each of 4 ft diameter and 25 ft depth) - around 300,000 litres is pumped out from the wells daily for use in the cooling process which is the main water need in the campus
- Aside from these, the campus already had four old open wells ranging in size from 6 ft x 25 ft to 30 ft x 35 ft that were cleaned and rejuvenated - the water from them is also used for cooling and cleaning
- This has reduced the dependence of the RWF on Kaveri water from 1.3 MLD to 0.9 MLD



- 34 acre gated layout with ~ 400 plots
- Key problems
 - Heavy dependence on groundwater
 - Very high water demand
 - No groundwater recharge
 - Deep borewells, borewells drying up
 - Flooding in low lying areas
- Actions taken with Biome's consultancy
 - Metering of every household and slab-based tariff for water
 - Houses without RWH did not get water supply
 - Recharge well digging - one per house in the SWD outside - **now there are 360+ recharge wells**
 - No private borewell allowed
 - Phytoid STP - treated water used for gardening
- Results
 - Demand reduced from 246 to 150 lpcd
 - Flooding prevented
 - Two shallow dry borewells revived, yield of others increased
 - STP capacity reduced, opex reduced

Recharge wells for recharging groundwater and flood mitigation - Rainbow Drive layout



Groundwater table goes up due to recharge wells - IIM Bangalore

- IIMB faced a severe water crisis close to a decade ago as all their borewells dried up and BWSSB water bills kept mounting
- They did rooftop rainwater harvesting and also dug 57 recharge wells of 5 ft x 30 ft
- They also rejuvenated 3 old open wells which had also run dry, and directed rooftop runoff into two of them
- The open wells started holding water which is used for watering the garden
- In 2018, they found that four of their dry borewells had revived and now supply 15% of their water needs
- In 2019, the CGWB found that their water table had risen by 13.5 metres - from 20 m in 2018 to 6.5 m in 2019!



Cubbon Park - recharge wells recharge open wells that provide water for the plants

- Cubbon Park in the heart of Bengaluru is one its lungs (the other one being Lalbagh)
- A few years ago, 7 old open wells that had been unused and neglected were cleaned up and rejuvenated - now they provide over a lakh litres of water daily to the park
- Last year 73 recharge wells were dug, ensuring that the open wells never run out of water



Devanahalli town - This old open well was in a sorry state. It has been cleaned up and its water is now being pumped to augment the town's water supply. It is located next to a lake, and gets recharged through rainwater and treated wastewater that is supplied to the lake from Bengaluru everyday

**Open well
augmenting
a town's
water
supply**



