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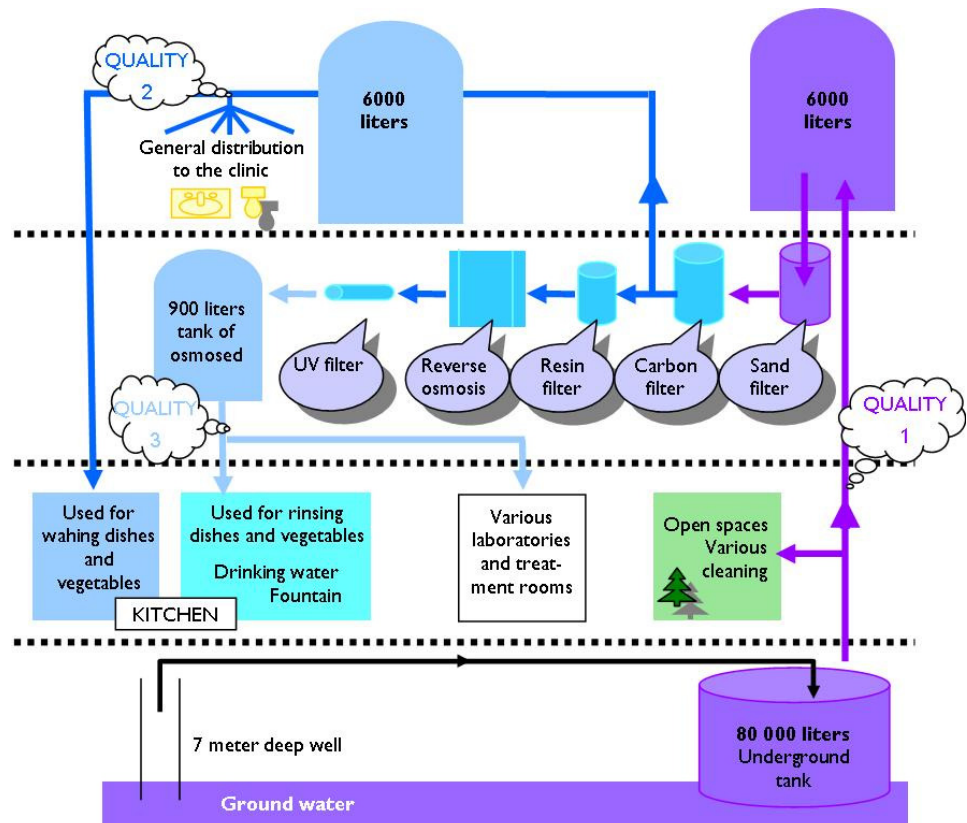
Water Autonomy and Quality in the Katmandu Shechen Clinic

Objectives:

Reducing diseases related to the consumption of very low quality water. Responding to chronic water shortages.

Methodology :

Groundwater is subjected to several physical treatments that allow the distribution of water of various degrees of quality that fits distinct usages.



Summary

The Shechen Clinic has outfitted itself with a system that allows for the supply of excellent quality water in sufficient amounts, using the local resource and an efficient filtration system.



Water is pumped from a depth of approximately 5 meters. It is then stocked in an 80,000 liter reservoir, which ensures autonomy for several days. This water is of mediocre quality – contaminated by water streaming from the streets – and must be rid of all existing pollutants. To do so, it is filtered by 5 distinct systems.

5 filtration systems:

- 1- **Sand filter:** This filter is designed to retain the largest particles, up to 5 microns.
- 2- **Active coal filter:** Coal absorbs organic contaminants in water that are responsible for taste, smell, and color issues. Coal particles retain contaminants such as hydrogen sulfide and heavy metals such as lead and mercury.
Water quality after these two filtrations is suitable to wash vegetables, cook, or wash dishes. The water can also be used for bathing. It will be sent to the clinic general system.
- 3- **Resin filter:** Softens the water
- 4- **Membrane filter** (reverse osmosis): Water goes through a 0.0001 micron pore membrane that filters out the smallest molecules. At this point water is quasi-purified, and does not contain any chemical or biological contaminant (bacteria, viruses, etc) any longer.
- 5- **Ultraviolet filter:** Water passes through ultraviolet rays, which completes its sterilization.

Water is ultimately kept in a 900 liter tank and distributed to the different posts for various usages. A member of the clinic, as a matter of fact the person in charge of the analytical lab, has been leading the station operations.

Results :

The clinic can now rely on excellent quality water to meet its various needs. This has eliminated the requirement to bring from the outside, and by tank truck, water that was both expensive and of dubious quality. Although it is difficult at this point to measure the overall impact on health of the new system, there is little doubt that it is significant.

Sources :

This report was elaborated by Roger Rouse, environmental consultant. Translation: Estelle Fach