

A major problem facing numerous housing complexes is availability of regular water supplies, and many today are dependent on tanker water.

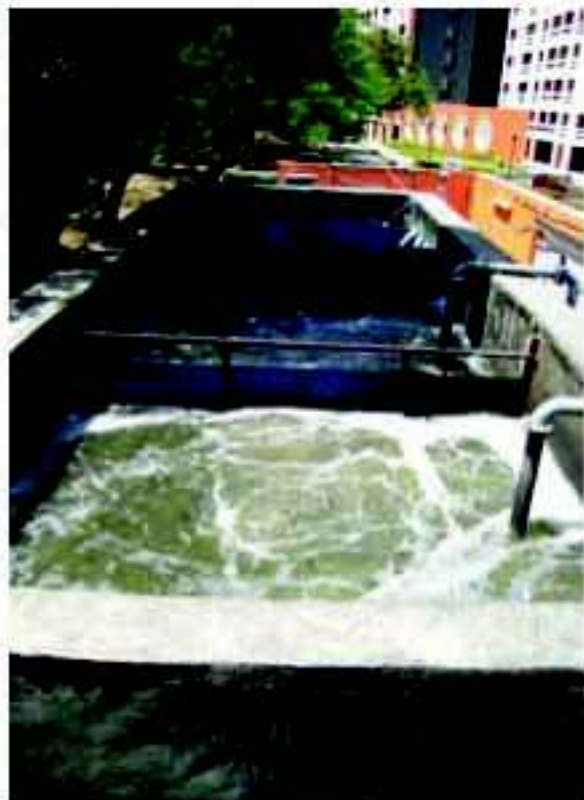
Recycle of sullage and sewage provides an effective and dependable solution in helping resolve the perennial water shortages in cities – where the domestic sector consumes 80 per cent of water supplies. It is, in fact, ideal for housing/commercial complexes which do not have guaranteed water supply, by providing them relief from water shortages.

Building in Water Assurance

Sullage (grey water from bathrooms and kitchens) and sewage can be treated and recycled for toilet flushing, gardening, vehicle washing and other such low-end uses, reducing the requirement of fresh water by 60 per cent. This makes more fresh water available for drinking, cooking, bathing and laundry while reducing dependence on unreliable/insufficient water supplies and drastically cutting down on expenses on tanker water. Besides, with water getting increasingly scarce, it will soon be difficult even for tankers to procure these supplies.

A Case in Point

The well respected builder R. Raheja's project at Thane, Maharashtra has



a three-wing housing complex with a total of 480 flats. The total water requirement for flushing and gardening is 150 m³/day. The cost of tanker water at Rs. 50/cu. m. amounted to Rs. 7500 daily, and Rs. 2.7 million annually.

A 200 m³/day INDION fluidised media reactor (FMR) was installed to recycle water. The total cost including accessories such as equalisation, treated water and holding tanks, was Rs. 4 million. A daily saving of 150 cu.m. fresh water which would have otherwise been used for secondary purposes, amounted to an annual saving of 55000 cu. m. of fresh water.

With an annual operating cost of the



FMR at Rs. 600,000 and an annual cost saving of Rs. 2.1 million, this recycle plant gave a payback in just 23 months. The additional cost incurred per sq. ft. (each flat admeasuring 1000 sq. ft.) was just Rs. 8.

Management of sewage generated from residential and commercial complexes is gaining importance from the point of view of both sanitation and water conservation. Sewage is now being looked upon as a consistently available, alternate source for water for specific uses – because as long as water is used for various domestic purposes, sewage will be generated. That sewage is available at the point-of-use is another advantage, thus making its decentralised treatment a win-win situation.

While selecting the treatment technology, the following points need to be kept in mind

- End use pattern of treated sewage
- Area available
- Location
- Capital and operating cost
- Reliability
- Amount of sewage

If the quantity of sewage to be treated is quite high, fluidised media reactor technology may be the best. Here, while the capital cost is lower, the quality of treated sewage is not as good as that obtained with the MBR system. The recycled water is suitable for low end purposes such as flushing, gardening and in some cases, even as cooling tower make up, after appropriate tertiary treatment. For treatment of smaller quantities of sewage such as in small housing complexes, compact sewage treatment plants are more suited.

Some of our installations of INDION fluidised media reactors (FMR) and INDION new generation sewage treatment plants (NGPSTP) in the realty, hospitality and defence sectors include:

Realty Sector

- 11.5 m³/day NGPSTP for VG Properties, Goa
- 23 m³/day NGPSTP for ABW Construction, Delhi
- 300 m³/day FMR for MIR Constructions, Kerala
- For Punj Lloyd, Delhi, a 400 m³/day FMR
- Kanakadhara Ventures, Hyderabad, 150 m³/day FMR

Defence Sector

- 200 m³/day FMR each for MES Delhi and Nagpur
- 500 m³/day FMR for MES Shillong
- Two orders of 1 MLD each FMRs for MES, Udhampur and Pathankot

Hospitality Sector

- 300 m³/day FMR for ITC Gardenia, Bangalore
- 150 m³/day FMR at Taj Residency, Lucknow
- 23 m³/day NGPSTP at Fort Hotel, Cochin
- Radisson Hotel, Jaipur, 100 m³/day FMR

Academic Institutions

- 4 units of NGPSTP, each 100 m³/day, for Indian Institute of Technology, Kanpur
- 150 m³/day FMR for Asian School of Business Management, Bhubaneshwar



At L & T Demag, Chennai, 35 m³/day NGPSTP



At Woodland Hospital, Shillong, 23 m³/day NGPSTP



At IIT, Kanpur, 100 m³/day NGPSTP



At Welcome Hotel, Saket, New Delhi, 200 m³/day FMR



For Landmark Construction, Chennai, 10 m³/day NGPSTP



At Taj Ummed, Ahmedabad 200 m³/day FMR



At Ginger Hotel, Pune, 46 m³/day NGPSTP



At Millanz Mall, Meerut, 34.5 m³/day NGPSTP