



# Group Housing Society Reuses Sewage For Its Water Needs

## Background

Landcraft Developers Pvt Ltd is one of the leading builders in North India. They were building a residential apartment complex in Ghaziabad called Carol Group Housing Society. Water availability at the site was limited and the project was also facing stringent water reuse demands from the local environment regulatory authority.

In order to meet all the environmental guidelines for discharge and to reuse the sewage for the large gardening and horticulture needs at the site, Carol Group Housing Society was considering various options for wastewater recycling. Domestic Sewage is generated from the apartment's toilets, baths, showers, kitchens and storm water drains that is disposed of via sewers. The total sewage capacity is about 550 kilolitres per day. The raw sewage has a BOD of about 350 mg/litre, a COD of 600 mg/litre, total suspended solids level of 250 mg/litre and oil content of 20 mg/litre

## Solution

As one of the leading water treatment expert in the building sector, Fontus Water designed, built and installed a sewage recycling plant to meet Carol Group Housing Society's requirement. The Primary Treatment included a bar screen to protect the plant from larger-sized objects.

Following the equalization tank, the Secondary Treatment included a Submerged Aerator Fixed Film (SAFF) Reactor that uses totally submerged fixed media to support biomass growing as a thin biofilm on their surfaces. The air in form of fine bubbles coming from the bottom of tank comes in contact with Water & SAFF media. The tank is provided with fine bubble non-clog diffusers for the biological oxidation of sewage. This system is capable of handling shock loads with high efficiency and is easier to operate. With lower energy consumption and low sludge production, the technology was ideally suited for the requirement and occupies less space, compared to conventional technologies

The overflow of SAFF tank is taken in to the Tube Deck Media Clarifier. Here Tube Deck media in PVC is arranged to facilitate solid liquid separation. The Tertiary Treatment includes Multi-grade Filter and Activated Carbon Filter. The recycled water is crystal-clear and has no odour. The environmental requirements for BOD, COD and oil are also met by this system.

## Results

By using the sewage recycling plant supplied by Fontus Water, the Carol Group Housing Society is able to reduce the BOD output from its plant to less than 10 mg/litre. It is able to reduce its fresh water consumption by using the recycled water for gardening, horticulture, plantation, floor washing, Fountain & Toilet Flushing after Tertiary Treatment. The plant is successfully operated and maintained, ensuring the water saving to the housing complex and the community.