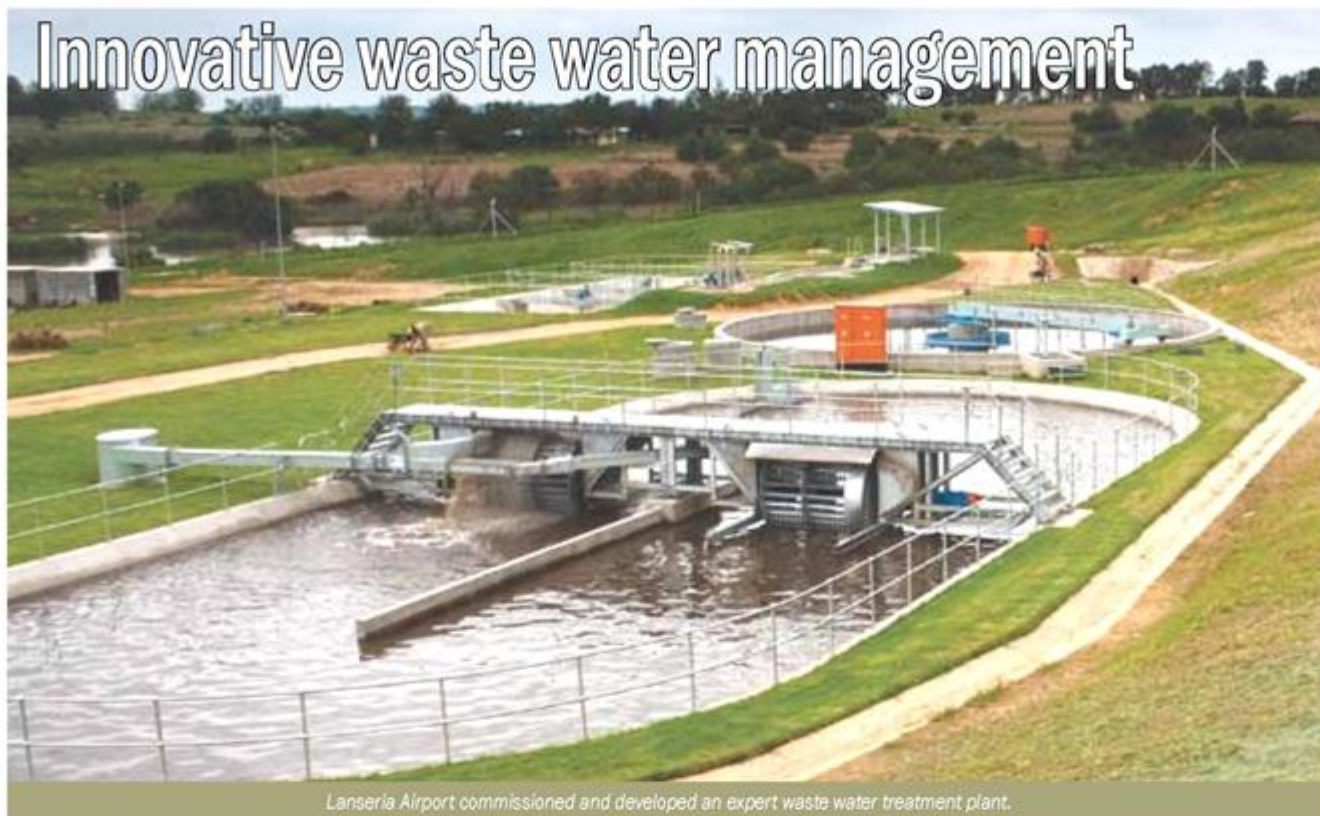




Lanseria Airport commissioned and developed an expert waste water treatment plant.

FORMING PART OF Lanseria Corporate Estate's large-scale R200-million investment in infrastructure, the new WWTW is one of the plants in Gauteng that complies with City of Johannesburg's new and extensive waste water management regulations. In addition to many other advantages, this green awareness solution sees treated domestic sewage being re-used to irrigate both the airport and Lanseria Corporate Estate, reducing demand on otherwise potable water supplies.

Lanseria Airport commissioned and developed an expert waste water treatment works (WWTW), and this innovative system has also attracted the participation of Lanseria Corporate Estate, Gauteng's newest upmarket industrial property development.

Lanseria Corporate Estate is a joint venture by an investment consortium including Efcon Capital and New Property Ventures. It is marketed by Montagu Property Group and Property Logic.

Industrial property developer Jurgen Erhart of Efcon Capital believes this environmentally-focused waste water solution delivers significant benefits for the estate's growing numbers of investors that include many top corporates.

The joint waste water treatment project started when the original ponds that received waste water across the greater Lanseria International Airport area required relocation due to runway expansion requirements, effluent

requirements and current capacity limitations. At the same time, the bordering Lanseria Corporate Estate was in planning stages.

"This presented an ideal opportunity to maximise synergies and create a world-class waste water treatment solution that would benefit both the airport and Lanseria Corporate Estate," says Erhart. "Given Lanseria Corporate Estate's commitment to safeguarding the environment, we also felt strongly that this was a sustainable option that would serve longer term interests."

Waste water specialists Tecrover were approached to develop the best solution to meet Johannesburg Water's specifications and other future requirements. This resulted in a dedicated mechanical, biological waste water application, implemented over three phases. The consultant appointed was Virtual Buro,

the civil contractor Infracore, the process design, civil geometrical design and mechanical equipment were provided by Tecrover.

"Tecrover provides a turnkey solution to waste water treatment works, with our focus aligned to provide clean water for future generations, thus every plant is a tailor-made solution to fit the client's specific needs," says Zack van den Berg, managing director of Tecrover.

Based on the worldwide accepted activated sludge principle, the biological process includes key technology features that deliver an efficient and cost effective solution to reduce organic carbon and nitrogen compounds to environmentally acceptable levels. This helps to further protect the surrounding environment.

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Technical notes

The first phase comprised several features, including inlet works, manually raked bar screens, de-gritting channels, flow meter and primary anaerobic pond and oxidation ponds.

The second phase, which has a hydraulic capacity of 500 kℓ per day includes a balancing tank with mixers and recirculation pumps (these were converted from the anaerobic tank of Phase I), an aerobic/anoxic reactor with horizontal brush aeration, a secondary sedimentation tank, chlorine contact tank and chlorine tablet dispenser.

Phase III comprises an extension to inlet works and the construction of an additional activated sludge aerobic/anoxic reactor, as well as the upgrading of the disinfection stage to an automatically controlled chlorine gas application.

Tecrover's patented Horizontal Aerators transfer oxygen into the biomass for access by the aerobic dependant micro-organisms and mix waste water to ensure contact between the micro-organisms and the substrate (food). The high-volume, low-lift aeration pump used automatically adjusts the aeration proportional to flow, this optimises power consumption, and no over-aeration takes place.

The unique pumping feature eliminates the need for two pump sets to transfer biomass to the secondary settling tank and the return activated sludge required from the underflow of the secondary settling tank. The aeration and pumping programmes are preset, reducing operational input while simplifying maintenance inputs.