

Stewart Buchanan and his father John Buchanan, founder of Prentec.

Prentec



# Longevity is a process

Few companies can boast 40 years in business. But what makes Prentec so special? *David A Steynberg* spends an hour on the phone with its MD Stewart Buchanan.

As a nine-year-old boy in 1974, Stewart Buchanan watched his father John bring an idea to reality. It was a bold idea; one which had not yet been seen nor coined: turnkey process engineering for the water and wastewater sector.

In an 18m<sup>2</sup> office near the-then Jan Smuts International Airport in Kempton Park, John established Prentec (Process Engineering Technology) to design, and construct treatment plants for private and public operators. The manufacture, construction and operation, and maintenance of the facilities were initially contracted out.

At the end of 2014, Prentec turned 40 years old, with John's son, Stewart, having been at the helm since 2007. The company today boasts a factory and office complex on a 16 000m<sup>2</sup> site in Chloorkop, on Johannesburg's East Rand, where an office block and five factories take care of process design, detail design, fabrication, pre-assembly, equipment testing and off-site plant monitoring, making it a true turnkey operation.

Much has changed in 40 years: today, many municipalities and private operators opt for more affordable plant, looking to tick the short-term balance sheet. But, according to Buchanan, this is costly in the long run.

"I believe the biggest challenge for local municipalities is the ability to select, procure and implement the most appropriate technology for the particular application," he says. "The technology selected should be evaluated not only on capital costs but should ensure low operation and maintenance requirements and costs, efficient treatment technology with guaranteed consistent results throughout its life cycle."

## Merit and capability

Part of the reason for this is that municipalities, especially in the smaller metros, fail to appoint infrastructure-related engineers on

merit and capability, and instead opt for political appointments.

"This would ensure continuity and experience that is desperately required to effectively manage the costly infrastructure," he says, adding that without experienced engineers employed within the municipality, consultants are sought. "This is when inappropriate treatment plant options are often awarded. Without an engineer, a municipality often doesn't see the benefits in long-term, industrial-manufactured treatment solutions which are easily operated and have low maintenance requirements which could be included in the contract."

## Risk-induced reliability

It's no secret that many water and wastewater treatment plants are no longer functional due to negligence. Buchanan maintains that it is better to seek out reliable engineers and contractors to rejuvenate some of the existing treatment plants instead of condemning them.

"Utilisation companies, such as Rand Water, own and operate assets, and by doing maintenance ensure their assets continue to function effectively," he says, noting that more management and operation service providers should be employed with more onerous contracts with public water utilities as is the case in the private sector.

"Management and operation contracts should be granted on a risk basis," says Buchanan. "Operators need to provide a good reliable service and should be penalised if there are service interruptions, poor treatment quality, or any other foreseeable problems in the required deliverables."

Buchanan believes that one of the best ways any company, including his, can ensure the health of the water sector is by getting involved in training.

"Prentec is merSETA-accredited to train artisans, and over the years it has trained and had numerous

**Buchanan maintains that it is better to seek out reliable engineers and contractors to rejuvenate some of the existing treatment plants instead of condemning them.**

boilermakers certified for the industry,” he says. “Our most recent artisan intake included five women who were previously unemployed. They have completed extensive training in our ISO9001-accredited factory, and are awaiting available slots for the trade test and certification.”

It’s a combination of hands-on training and continuity of professional staff that has made some municipalities’ water infrastructure and product quality green and Blue Drop-certified. But there is another side to water: innovation.

## Better solutions

“South Africa has water constraints, that’s no secret,” says Buchanan. “Where we are continually innovating new and better solutions, such as by viably treating mine-affected water so that it is rendered as potable or reusable in other process streams.

“Prentec has been awarded several mine-affected water projects during the years, with the most recent being Matla Coal, 20km west of Kriel in

Mpumalanga. These projects allowed us to receive raw water contaminated from underground mining operations and render it reusable or as potable water for the client or local communities.

“The complete process is designed and developed by Prentec’s in-house process engineering department with a focus to reduce the final waste. Prentec’s multi-stage LoRO process seems to address the issues of the current strategy by achieving low power, low chemical consumption and low reject flows. The complete plant was manufactured and pre-tested in Prentec’s Chloorkop factory before being partially stripped and transported to site. In addition, Prentec has been contracted to operate and maintain the plant on behalf of the client.”

Buchanan may have grown up, gotten married and had children, but when he speaks about the industry and Prentec, it’s hard for him to hide the same enthusiasm he had as a nine-year-old watching his father build the company from a dream. ●