

# WORLD TOILET DAY

## SASTEP – Leading the rollout of sanitation transformation in SA schools

*Every year, the world celebrates World Toilet Day on 19 November. Akin Akinsete and Ednah Mamakoa take this opportunity to reflect on a programme to bring dignified sanitation to South Africa's schools through the implementation of next generation sanitation technologies.*

All photographs supplied



On August 14, 2018, President Cyril Ramaphosa launched the Sanitation Appropriate for Education (SAFE) Initiative in response to a spate of school learner fatalities in unsafe and dilapidated school toilet facilities. The SAFE Initiative's mandate is to "spare generations of young South Africans the indignity, discomfort and danger of using pit latrines and other unsafe facilities in schools". It is timeous and needs to be sustained with multi-stakeholder support and attention until every school learner in South Africa has access to a school toilet facility that allows them to perform basic bodily functions in privacy and dignity without fear or danger to their health, safety, and overall well-being, regardless of whether it is a school situated in an urban, peri-urban or rural setting. However, focus and emphasis of the SAFE initiative is mainly on capital expenditure, on replacing old unimproved pit latrines, and very little budget is given to much-needed operations and maintenance. As such, the improvements brought on by the SAFE Initiative could evaporate in the not-too-distant future if a concerted school

sanitation operation and maintenance strategy is not adopted soonest.

The provision of school sanitation facilities seems to suffer from a one-size-fits-all approach. The current approach is in lockstep with the current sanitation service paradigm across the country and mirrors the economic inequality that pervades our society. Solutions deployed seem to be motivated by expediency rather than what is good for the learners. It should be recognised that solutions are constrained by available sanitation infrastructure and availability of water, which are easily overcome by emerging innovations in sanitation technologies. There is also a reluctance from school sanitation decision-makers to embrace innovation and, in many cases, they stick with incumbent technologies that is within their comfort zone.

While this approach works for school in areas with good infrastructure e.g. in cities, upmarket suburbs and metropolitan

areas, schools in peri-urban or rural areas, where there are no bulk sanitation infrastructure, have to make do with pit latrines or other variants of dry sanitation technologies. These dry sanitation technologies are sustainable if well maintained. However, this is not often the case, and the reason for selecting these technologies is because of the perception that pit latrines do not require maintenance. Learner fatalities in schools have shown that this approach and lack of attention to pit latrines that become dilapidated is a risk and a good reason why expediency should not be the key factor in selecting school sanitation technologies.

Next Generation Sanitation (NGS) technologies can assist in addressing current sanitation challenges in schools and achieve the vision of the presidency's SAFE Initiative. NGS solutions can address sanitation challenges in areas where there is no existing sewer reticulation system. Non-sewered sanitation systems that recover flush water, treat it, and recycle it for flushing, making waterborne solutions possible in water stress areas. Even areas with a reliable water supply and existing sewer reticulation systems can benefit from innovative water-efficient pedestals that minimize the flush volume and reduce water bills in schools. It is, therefore, imperative to support and fast-track the adoption of these technologies in schools. It is also important that this is backed by a coherent operation and maintenance strategy to ensure the realisation of the promised benefits of NGS.

The Water Research Commission (WRC) has been at the forefront of advancing the adoption of relevant innovation in school sanitation, and several WRC studies have shown that an ill-equipped sanitation technology toolbox and lack of investment in operation and maintenance (O&M) are responsible for the deplorable state of some of the sanitation facilities found in schools. The inclusion of the innovative next generation in the sanitation technology mix and the introduction of a sustainable O&M model would alleviate the current issue and deliver the vision of President Ramaphosa's SAFE Initiative.

Through the WRC's sanitation programme, the South African Sanitation Technologies Enterprise Programme (SASTEP), next-generation sanitation technologies are being demonstrated in schools to address the issues highlighted above and to ensure the uptake of innovative sanitation technologies and solutions that are capable of transforming school sanitation, and reduce the current high cost per toilet seat, increase safety and provide

the next generation of learners with hygienic and dignified sanitation solutions.

Since 2020, demonstration projects have been launched in schools in Gauteng, the North-West, KwaZulu-Natal and Eastern Cape provinces. A total of thirteen schools will receive innovative sanitation technologies. The aim of these projects is to showcase these technologies in schools and demonstrate their robustness, appropriateness, and value proposition. The data from these demonstration projects are expected to strengthen the argument for the inclusion of innovative technologies in school sanitation and provide an understanding of the capital expenditure, operational expenditure, O&M and the social aspects (user acceptance, behavioural change etc.). The WRC plans to filter the data collected, lesson learnt and knowledge into a school sanitation toolbox that can inform and direct school sanitation stakeholder and decision makers on available technologies, cost, operational models and behavioural changes needed to improve sanitation in school within their spheres and control. This will also contribute to recommendation to enhance and improve school sanitation norms and standards.

These projects have not only improved the sanitation and hygiene conditions of the schools, but have also improved the socio-economic impact of local communities by providing employment and business opportunities.

**Table 1: Number of job opportunities per school project**

Name of school	Number of job opportunities
Celikungu Primary School	14 labourers, A janitor and an assessor
Tsholetsega Primary school	A local contractor, 2 janitors and 5 plumbers
Olivenhoutbosch and Esikhisini Primary Schools	10 SMMEs, 4 interns and 2 janitors
Tirelo Farm School	A local contractor, 15 personnel and a janitor
Bakerville Primary School	Local contractor, 3 personnel and a janitor



*A clear recirculating toilet was handed over to Tsholetsega Primary School in Krugersdorp on in 2020. The toilets serve 1 200 learners and, to date, no issues have been reported. The principal has reported that school attendance has improved, and that the school is saving money.*

These projects have shown, over a short period of time, the capacity for next-generation sanitation solutions to provide and foster safer sanitation facilities that protect learners from unsafe and unhygienic facilities and prevent child mortality. In addition, feedback from parents and teachers at the schools have been overwhelmingly positive and common feedback is that parent and teachers no longer worry about unsafe and unhygienic toilets in these schools. It is hoped that upon conclusion of the SASTEP SAFE Schools Project, an innovative school sanitation toolbox would have emerged that not only address current sanitation challenges, regardless of the geographical, location but one that has the South African child at its centre, fulfils the aspirational needs of communities and narrows the inequality gap in service delivery across all schools in the country.



*Celinkungu Primary School is situated in at Mount Ayliff, in rural Eastern Cape. Roads to the school are often flooded if there are heavy rains. This school is home to 158 learners and 6 teachers, who all had to use pit latrines which were full and chemical toilets that were not well maintained. In 2022, the Eazy-Split solution was handed over to the school. This pedestal separates urine and faecal matter and requires only 2 litres of water to flush.*



*Bakerville Primary School is located in Ngxabaxa Mount Frere, in the Eastern Cape. The school has 172 learners, and had only 3 pit latrines that had deteriorated significantly. The Arumloo low-flush toilet and associated DEWdrop ecological wastewater treatment system presented an opportunity to address the challenge of effective robust sanitation delivery to provide hygienic and dignified school sanitation facilities.*

## Benefits of installing new generation sanitation (NGS) technologies in schools

1. Aspirational waterborne sanitation technologies provide learners with improved and dignified sanitation facilities.
2. Improved safety of school sanitation facilities. NGS technologies remove the need for the storage of faecal matter in vaults underneath pit latrines that are susceptible to failure over time, and have been main cause of learner fatality in schools.
3. Hygienic and clean facility.
4. Toilet facility can be situated closer to classrooms. Pit latrines are situated far from classroom due to the odour from pits.
5. Situating NGS toilet facilities in close proximity to classrooms and school administrative block allows for better teacher supervision and learner safety.
6. NGS toilet facilities offer more effective treatment of faecal waste and help prevent faecal-mouth disease transmission prevalent with pit latrines.
7. Full recirculating water NGS technologies recovers the water streams from sanitation waste and reused for flushing. This minimises water use, promotes water conservancy and resilience.