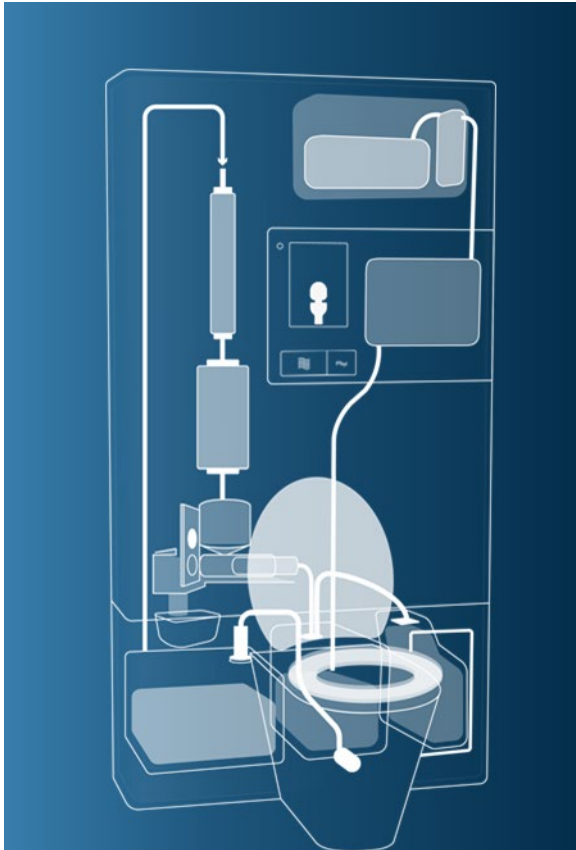


## Hydrothermal Carbonization Toilet

The HTClean Toilet is a next-generation Reinvented Toilet based on a high temperature and high-pressure processing design. The HTClean toilet system is a highly disruptive technology with potential to change the South African sanitation landscape in years to come. The HTClean technology has been matched with a SASTEP Partner, Rossi Engineering, under licensing from BMGF. Rossi Engineering as part of the agreement will localize, manufacture, market and distribute the HTClean technology in South Africa as well as the rest of the continent.

The toilet is being engineered specifically for the household with intuitive human machine interface (HMI) with visual cues on operation, maintenance, status, and usability are integrated. The toilet is a self-sustaining system that does not require sewer connections. It employs a vacuum flush system which greatly reduces the flush water requirements (0.2-0.9 L). The system is designed for up to 10 users per day.

The waste collected after flushing is processed in a reactor chamber and heated above 160°C, at a pressure up to 25 bar. After cooling the reactor is discharged and solids and liquids are separated, resulting in a small filter 'cake'. The produced liquid is retained and then cleaned for use in the toilet flushing system. Water vapor released from the reactor after processing is used for pre-heating quenched in a bubble tank. The quenched water is also cleaned and combined with the flush water.





**Features:**

- Vacuum-flush toilet
- Incorporates smell blocking mechanism
- Provides efficient water management
- Continuous operation at high-frequency usage
- Storage capacity for efficient batch processing and minimal energy consumption
- Bacteria, viruses and other pathogens are killed
- Drugs and antibiotics are degraded
- Faecal biomass is transformed into carbon materials
- Closed-loop water cycle
- Self-sustaining toilet without water and sewage connection
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