

## **No Sewer does not mean No Toilet**

In the past if you didn't have a flush toilet with a sewer pipe connection taking the water to the treatment works then your only option was a pit toilet with the accompanying bad smells.

However, scientists, engineers and municipal practitioners have been investigating on-site solutions that do not need large amounts of potable water to flush and costly sewer networks and treatment works.

Options for On-site sanitation solutions or Non-Sewered Sanitation (NSS) include various biological and drying toilets, incineration toilets and a number of systems known as New Generation Sanitation Solutions (NGS). The objective of these systems which form part of the Re-Invent the Toilet Challenge are:

- That all waste is treated safely on site and thus no sewer is required
- The toilet can offer the same user experience as a regular flush toilet and is thus desirable
- Is high tech but affordable due to production at scale
- Where possible it contributes to the circular economy (recycling of waste products)

The NGS systems being tested at present include a front-end pedestal with a very low flush volume, separation of waste products (i.e., urine, faecal waste and toilet paper) and back-end treatment of the waste products using a variety of chemical, mechanical, membrane and drying processes.

With the devastating effects of climate change on our sanitation infrastructure and water resources as well as the excessive costs to install and maintain infrastructure, toilets which do not need sewers and large treatment works are starting to make a lot of sense!