



SPINOFF

PROCESS THE POWER OF RECYCLING

Is it right that we use drinking water to flush our toilets? Private company Firmus doesn't think so and has conceived an alternative. Designed for spaceflights, its FGWRS grey water recycling process could be used in our homes.

More than half of the water consumed in every home—for showers, washing machines, swimming pools and so on—is only slightly polluted after use. The FGWRS¹ system gives this so-called 'grey water' a second lease of life, employing a sequence of membrane-filter stages between doubled grey-water and black-water collection systems and drinking water and recycled water supply systems. Developed for CNES and ESA, the system is in use since 2005 at the French-Italian Concordia research station where 15 scientists—equivalent to the crew of a long-duration spaceflight—spend the polar winter cut off from the outside world.

MEETING TOMORROW'S CHALLENGES

Firmus offers the capability to scale its system to varying degrees of use and is now looking to take it into people's homes, initially for multi-residential housing. With this aim in mind, the company has brought on board the complementary expertise of Sherpa Engineering (modelling), MRI (upstream and downstream water treatment) and Dalkia Smart Building (energy efficiency). "Investing today in grey water recycling technologies will allow us in the future to combat water stress and the effects of climate change to conserve drinking water resources," says Firmus CEO Pierre Magnes. "These recycling technologies aren't authorized in France but we've tested our process for a hotel in Monaco. Combined with the very good results from Concordia, we'll be able to demonstrate that re-using grey water poses no risk."

1. Full/Firmus Grey Water Recycling System



> 80%
of grey
water
can be perfectly recycled
using the FGWRS
process.