



## Greywater Treatment & Reuse



# Case Study



### Qatar Foundation – Education City

**Industry:** Institutional (University)

**Location:** Doha, Qatar

**Capacity:** Capacity: Two (2) x 30.3 m<sup>3</sup>/day; 8,004 GPD

**Installed:** 2013

Newterra designed and built two complete, modular Membrane Bioreactor (MBR) systems to treat greywater from student residences at the progressive Education City campus in Qatar. The sustainable treatment systems, which provide high quality effluent for toilet flushing, contributed to the institution's LEED (Leadership in Energy and Environmental Design) certification.

#### Project Background

Education City is an ambitious initiative of Qatar Foundation for Education, Science and Community Development. The vast campus, which covers over 2,500 acres, houses educational facilities from pre-school through post-secondary, and includes research facilities and branch campuses of major international universities.

As part of the expansion of the campus in 2012, a greywater treatment and reuse solution was needed for a male and female residence on the architecturally diverse campus. Central to the project's success was the achievement of the U.S. Green Building Council's LEED certification. Buildings that have this designation are resource efficient, using less water, energy and reducing greenhouse gas emissions.

Although the greywater treatment systems would be housed in a separate, building adjacent to the residences, the client wanted self-contained, modular systems for the project.

#### Newterra Solution

Based on the reuse requirements, which demanded treated effluent of very high quality, Newterra was selected for the project. Two identical, modular MBR systems were engineered, built and tested at Newterra's Brockville, ON manufacturing facility.

Membrane bioreactor (MBR) treatment technology is a simple, yet effective combination of an activated sludge biological treatment process with membrane filtration. The self-contained systems feature Newterra's patented MicroClear® ultrafiltration (UF) flat sheet membranes. These are far superior and require significantly less space than the gravity separation of mixed liquor in conventional activated sludge systems. The MicroClear® membranes provide a physical barrier to suspended solids, bacteria, protozoa and viruses down to 0.4 µm in size.

The resulting effluent is pristine, and meets the stringent reuse quality requirements for toilet flushing.

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