EMORY UNIVERSITY

How the WaterHub Works

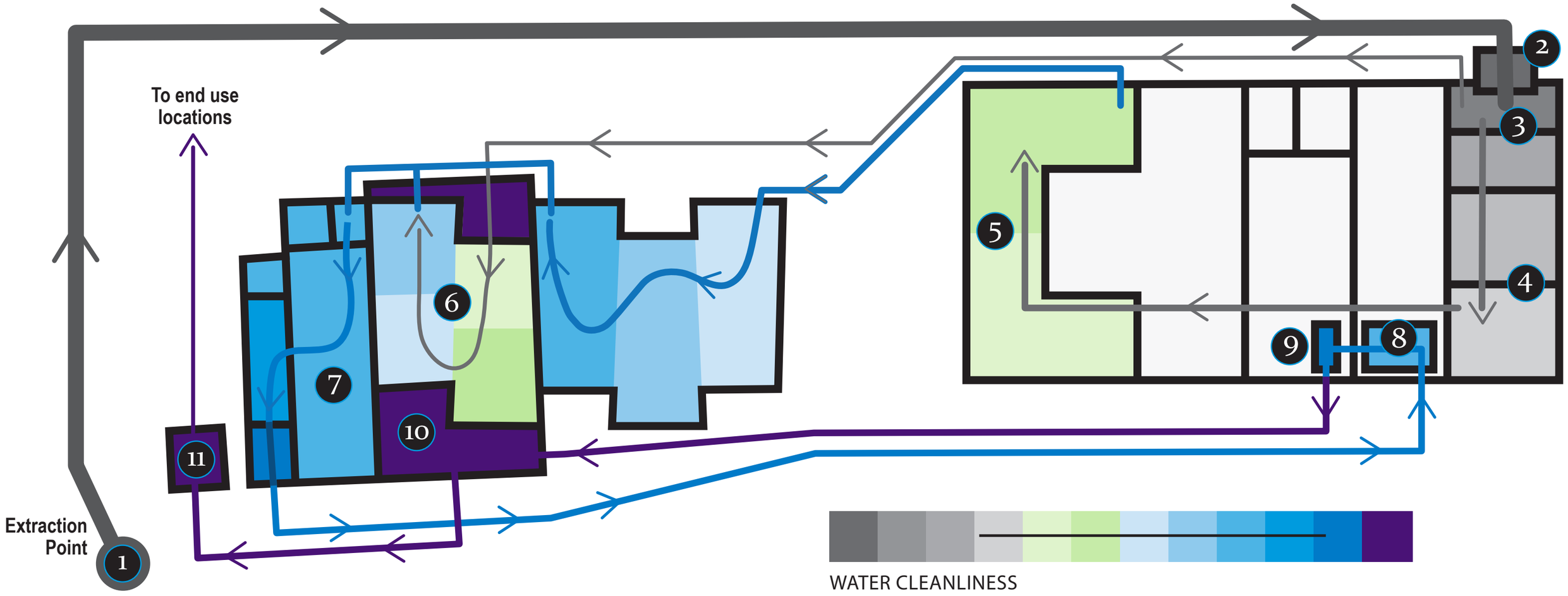
1 2 Extraction Point & Rotary Screen
Wastewater is diverted from the sewer system and sent through a screen to remove debris.

3 Anoxic Moving Bed Bioreactors
Wastewater enters a low-oxygen environment where microorganisms living on honeycombed plastic pellets (mid-density housing for microbes) begin to metabolize carbon and nitrogen.

4 Aerobic Moving Bed Bioreactors
Wastewater enters an oxygen containing environment with a different community of microbes that continue the treatment process. Diffusers add air bubbles to assist treatment. Odorous gasses are removed with charcoal filters.

5 Hydroponic Reactors
Water clarity increases as water is treated in tanks with suspended plant roots. Water is cleaned by microbes living on the plant roots and on the specially engineered bio fabric (high-density housing for microbes) located below the plant roots.

6 Demonstration Reciprocating Wetlands
An alternate treatment system, this area demonstrates a highly energy efficient treatment process applicable for rural areas and developing countries. Screened wastewater is pumped to four 8' deep cells. Cells are alternately filled-and-drained 8 to 18 times a day. The system mimics the behavior of natural tidal wetland areas and uses gravel and plant roots to provide microbial habitat.



7 Clarifier Tank
In a still-water tank, Phosphorus and any remaining solids are removed as the particles hit interior baffles and slide to the bottom.

8 Disk Filter
Very clean water is sent through a felt filter to remove any remaining particulate material.

9 Ultraviolet Disinfection
Water is treated with ultraviolet light that provides extensive disinfection, producing water that complies with state and local health requirements.

10 50,000 Gallon Storage Tank
Fully treated water is stored underground as a reserve supply.

11 Campus Distribution
Water is distributed to the steam and chiller plants for use as process make-up water. In the future, water will be sent to residence halls for toilet flushing.