BULLITT CENTER

SEATTLE, WA

PRINCIPAL-IN-CHARGE
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SERVICES
Net Zero Water Design.
Water conservation and water demands estimate.
Rainwater Harvesting.
Composting Toilets.
Constructed Wetland for treatment.
Greywater Reuse

The water petal of the **Living Building Challenge** envisions a future whereby all buildings are designed to harvest sufficient water to meet the needs of occupants, while respecting the natural hydrology of the site, the water needs of neighbors, and the ecosystem it inhabits. With this design approach, the Bullitt Foundation's new office building will have a net-zero water balance and may become the first commercial scale Living Building located in the Pacific Northwest. **2020 ENGINEERING** is assisting the Bullitt Foundation in meeting the two Water Imperatives of the Living Building Challenge. This integrated design will provide the "closed loop" water system required by Imperative 5 and 6 of the Living Building Challenge.

The rainwater falling on a membrane roofing surface will be collected, stored in a cistern, and treated before being pumped to water fixtures to meet the overall water demand. Rainwater collected on-site will supply the building with water for indoor uses and outdoor irrigation. Harvested rainwater pumped from the cistern will be filtered and passed through a ultra-violet disinfection system before reaching the potable fixtures such as bathroom sinks, showers, and kitchenettes. Rainwater intended for non-potable uses (i.e. foam-flush toilets and irrigation) will be filtered, but not disinfected, before entering the non-potable water fixtures. Blackwater from the foam-flush toilets, and waterless urinals will be treated in basement composting units. The composting units produce a dehydrated, condensed solid. Biosolids may be used as a nutrient rich fertilizer. Greywater will be collected in basement holding tanks before treatment. The greywater will be treated in a constructed wetland in the building's 3rd floor green roof area. Following treatment, the treated greywater will provide irrigation value and infiltrate into native soils below.