

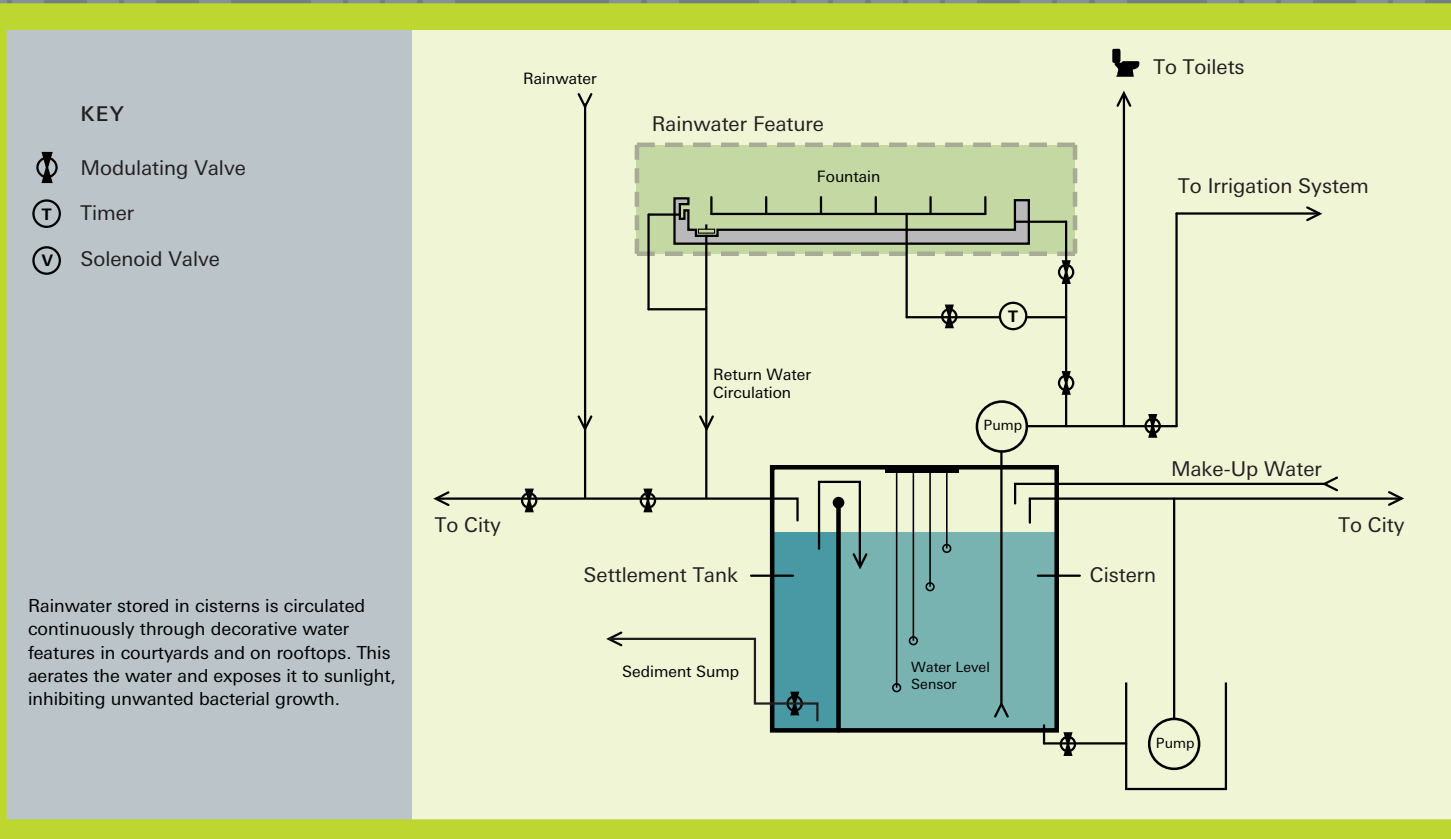
Systems and Cisterns

Buildings in the Olympic Village include an internal infrastructure entirely dedicated to the capture, storage and usage of rainwater.

Water is collected from roof and building podium areas, then channelled to cisterns in each building's basement. The rainwater is continuously pumped through courtyard water features and to toilet tanks throughout the building (see page 10) as demand requires. During the summer, water is directed towards irrigation as well.

Each building is able to draw make-up water from the municipal reservoir when needed. During times of heavy rainfall when cisterns are full, the buildings will shed excess water to the first tier of the Village's two-tier stormwater system (page 14).

"Moving forward, this is the type of system that can really help residents use water wisely," says Jason Christensen of Keystone Environmental, which has provided monitoring services for the water in the cisterns. "It's something that needs to happen, so it's good to see."

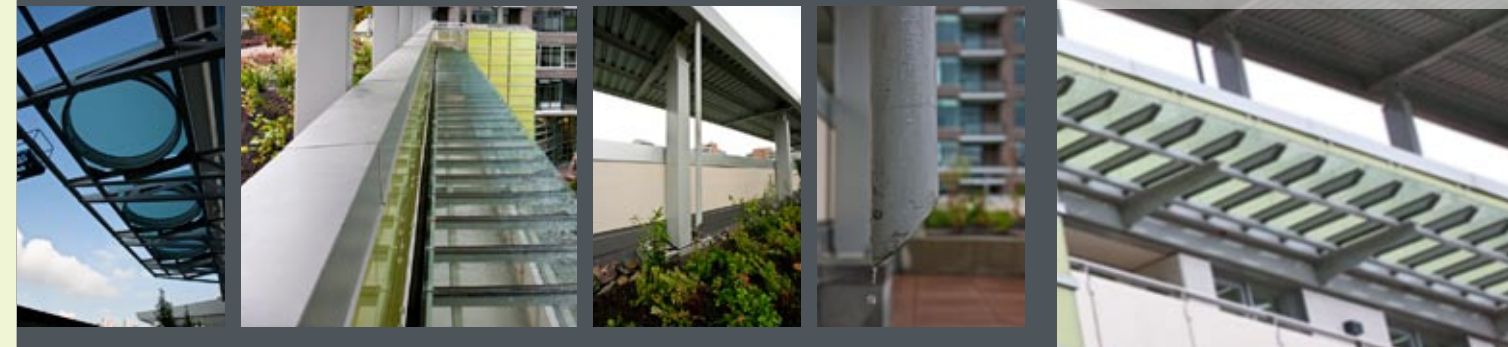


Extended roofing structures on Parcel 2 help collect extra rainwater, and make its collection and use more visible to residents.

Roof Structures

All Millennium Water roofs collect rain. But Parcels 2 and 9 have additional structures specifically for this purpose. "They're like visors, at the top of the building above the parapet," says Stu Lyon of gBL Architects. "They help rain-shield the building, and they extend its capacity to collect rain." The water will fill rain barrels for use in rooftop community gardens before overflowing to the underground cisterns.

"It's a very visible piece of sustainability for anybody working on those rooftops," says Lyon. "No one sees the cistern in the basement, but they can see the water coming off the roof and going into the barrels. Hopefully this has an impact on the way people see their world, and gives them a better appreciation for the value of water, and for saving it for later use."



PROFILE

Patrick Lucey

Aqua-Tex Scientific Consulting Ltd.

Patrick Lucey's background spans marine, intertidal and freshwater aquatic ecology, as well as 10 years spent in the construction industry. Originally planning to be a pediatrician, a professor changed his mind. "He said the world will have enough pediatricians in 25 years," says Lucey. "What it will need is planetary physicians – people who understand how nature structures the world we live in." Lucey now advocates that every community have a staff "municipal ecologist." "When we have a question about how the landscape works, there is no one to go to, whose primary role is to understand how the landscape we live in functions, and whether it is healthy or not."

Lucey's work has led to several trademarked concepts. The first is "regenerative adaptive design." "It's not enough to mitigate damage," he says. "We need to regenerate natural capital and ecosystem services, and close the loops of energy and water. That's the design process embodied at SEFC."

Another concept is "engineered ecology." "We have to continue our shift from the engineering we've done for 2,000 years, past environmental engineering that started in the 1970s, to the newest form of high tech on the planet – engineered ecology."

Lucey points to the success of the newly rehabilitated shoreline at SEFC, where herring have spawned for the first time in decades. "That's amazing; herring are very sensitive. They told us, "you guys got it right."

CHALLENGE

To all North American municipalities: to mandate that all new developments capture, store, and reuse rainwater for toilet flushing and irrigation, on a "water balance" basis, to achieve maximum reductions in the use of municipal potable water supplies.