

Reducing water consumption in commercial office buildings

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Discoveries made during PhD studies in Architecture by Victoria University graduand Lee Bint shows that tariff structures affect water use in commercial office buildings in Wellington and Auckland.

Her research shows that Wellington [office buildings](#) use more [water](#) than those in Auckland, despite the fact that Auckland has a warmer, more humid climate—and that this is perhaps due to the greater [financial incentives](#) to save water that are available in Auckland.

Miss Bint has spent four years examining water performance and developing performance benchmarks for commercial office buildings in New Zealand, which she says is a gap in the building industry not often considered.

"Some New Zealand regions face expensive infrastructure upgrades to cope with increasing demand, yet there is little understanding of [water consumption](#) and what denotes good or bad performance of usage among commercial office buildings," she says.

Miss Bint audited 93 commercial office buildings across Wellington and Auckland, visiting each site and working with building managers and water service providers. "This enabled me to construct water performance benchmarks and to understand what was actually happening in each building," she says.

There are three components to water related costs—a fixed service fee,

ingoing potable water and outgoing wastewater.

In Wellington, the service fee and ingoing potable water are invoiced bi-monthly. Outgoing wastewater is charged as a percentage of the capital value of the building, and cannot be reduced with water conservation.

In Auckland, all three charges are invoiced monthly, with ingoing potable water and outgoing wastewater charged based on water meter readings.

"This means that if a building's water is reduced in Wellington, they save only on ingoing potable water. If a building's [water use](#) is reduced in Auckland, they save on both ingoing potable water and outgoing wastewater, which is a much higher cost," says Miss Bint.

As part of her research, Miss Bint monitored three buildings for time-of-use patterns, and developed a Water Efficiency Rating Tool (WERT). The tool's purpose is to rate an office buildings water performance and provide guidance on how to achieve greater water-use efficiency, and it received the Wellington Regional Council Award at Grow Wellington's 2011 Bright Ideas Challenge.

Provided by Victoria University of Wellington

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