CASE STUDY

Water Efficiency at 80 Mooregate

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A water analysis was conducted by SensorSuite® on two similar buildings, 66 Mooregate (201 suites) and 80 Mooregate (199 suites).

The baseline water consumption at 80 Mooregate was higher when compared to 66 Mooregate, and a detailed analysis of the WaterLink data suggested water leakage. In addition, reduced water consumption was identified by upgrading showerheads and aerators, repairing or replacing leaking fixtures. The retrofit reduced the daily building water consumption average by 47% which is expected to save approximately 24,820m^3 and $121,618 annually (excluding gas savings for DHW). The water savings are verified by hourly monitoring.

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Background

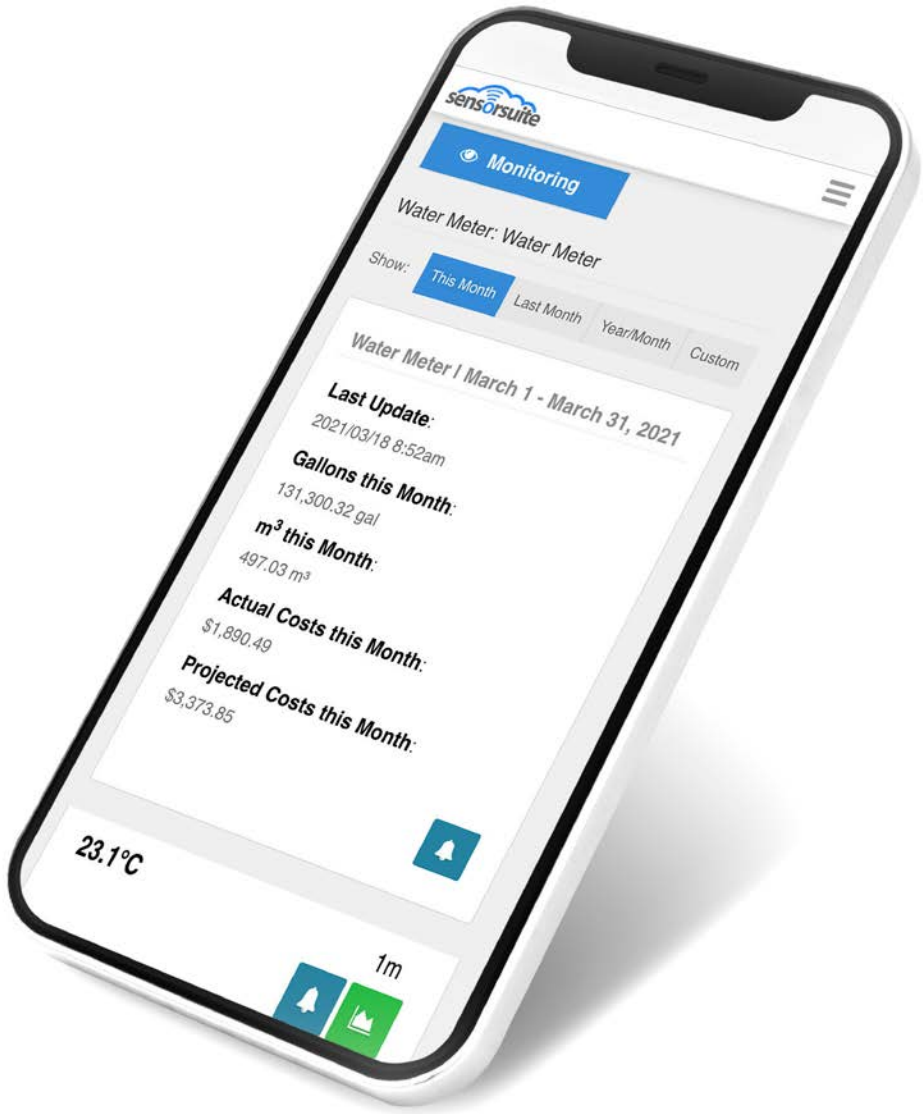
SensorSuite® is working with Hazelview Properties to improve energy efficiency and to reduce their carbon footprint across multiple buildings. At 66 & 80 Mooregate, water meters were installed on May 11, 2017 for leak detection and to capture water consumption.

With SensorSuite's WaterLink, the pulse output meter generates readings every minute to allow stakeholders to gain a more detailed understanding of the building's performance. By analyzing the hourly data of minimum, peak, and average consumption, it was determined the minimum consumption per unit at 80 Mooregate was significantly higher compared to 66 Mooregate. The daily average per unit consumption was 0.72 m^3 compared to 0.57 m^3. The assumption was there were significant leaks contributing to the high consumption. With the available data, it encouraged Hazelview Properties to complete a full water retrofit for the building.

Suite-by-Suite Tune Up

One of the most effective methods of reducing water consumption is through a suite-by-suite tune up. Any leaking fixtures should be repaired or replaced. Faucets which are difficult to turn off should have washers replaced, while faucets which cannot be turned off at all should be replaced with new washer-less faucets.

Shower diverter valves with substantial leakage should also be replaced. Many 6 litre toilets are designed to flush only a portion of the tank volume. The OEM flappers often have a perforation in the side or a float on the chain which enables the flapper to close before the tank empties completely. Due to chlorine in the water, it causes toilet flappers to deteriorate over time and eventually leak so the flapper should be replaced with new OEM flappers. In addition, toilet filler valves can be adjusted to correct fill volumes. By installing low flow faucet aerators and showerheads, it will yield further savings. Faucet aerators typically range in flow from 1.3 to 8.3 lpm (0.35 to 2.2 gpm). Shower-heads typically range in flow from 4.7 to 7.6lpm (1.25 to 2.0 gpm).



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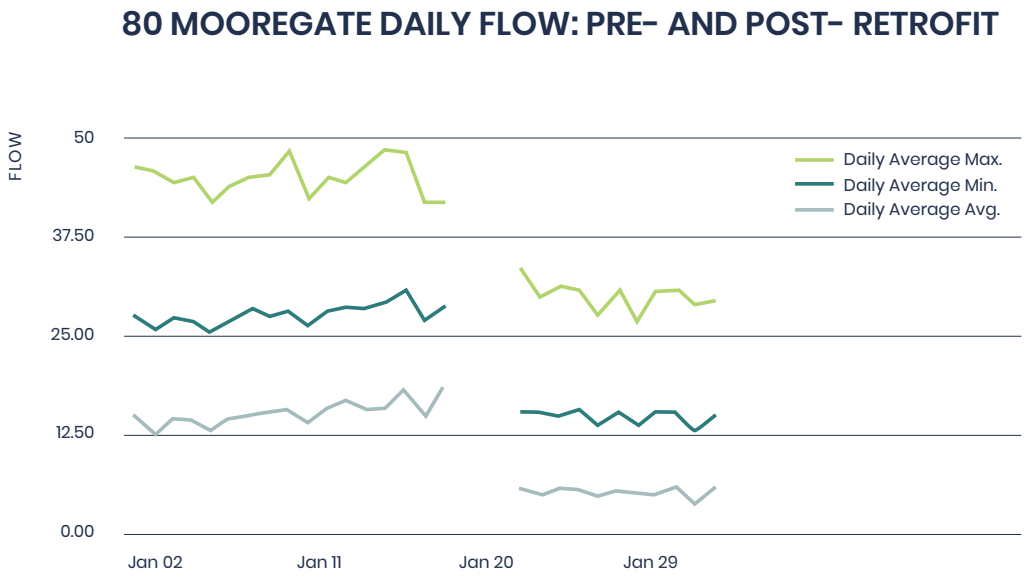
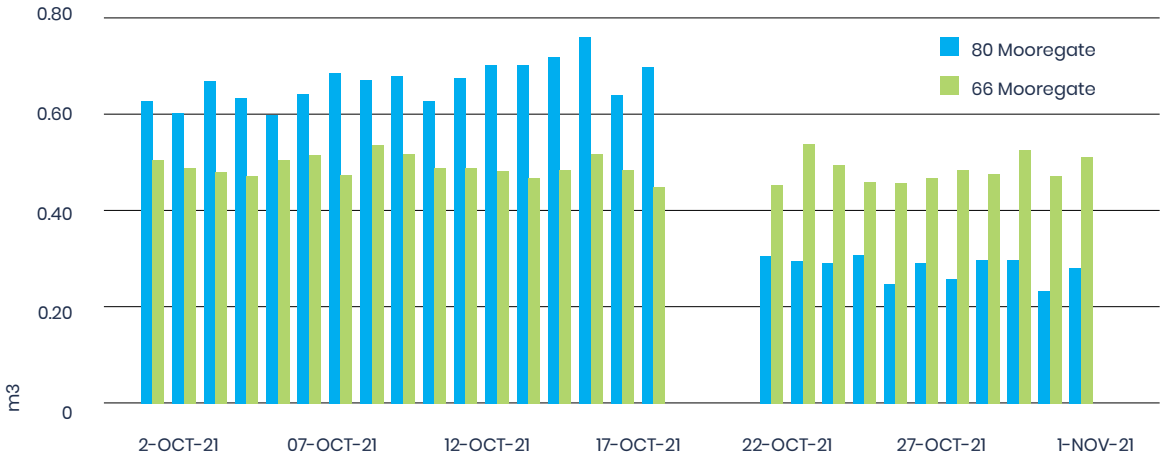
Results

The retrofit was completed from October 18th - October 20th for each suite at 80 Mooregate which included replacement of low cost internal toilet components (flapper, etc.) to minimize leakage, and low flow showerheads and faucet aerators to achieve greater savings. As a result, the minimum, maximum, and average flow rate decreased significantly as shown in the graph on the right.



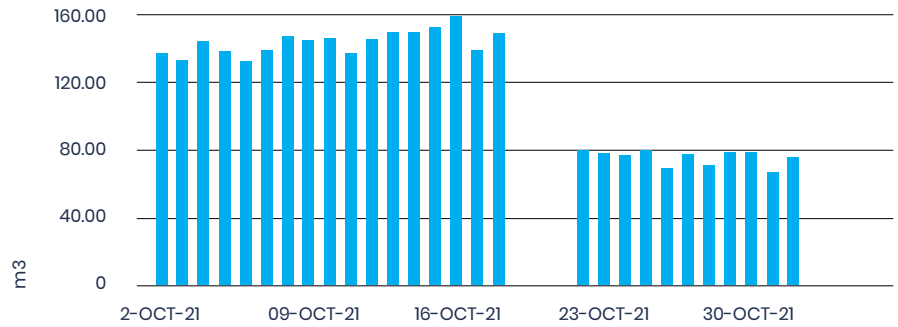
RESULTS CONT'D

66 & 80 MOOREGATE DAILY PER UNIT CONSUMPTION (m3/UNIT)

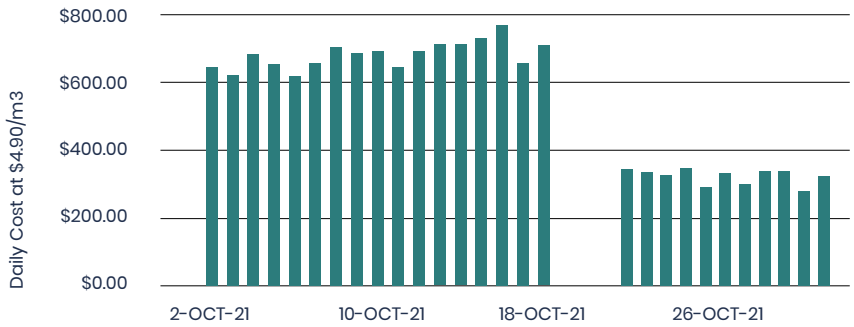


The graphs to the left, shows the before and after retrofit consumption, and the daily building cost. 66 Mooregate is shown as a control comparison which indicates the consumption is relatively constant. The daily average per unit consumption was reduced to 0.38m³ from 0.72m³, and the daily building average was decreased to 76m³ from 144m³. The daily building average cost was reduced to $372 from $705. The retrofit cost was $12,413 for the WaterLink and suite-by-suite tune up with the projected payback of 1.2 months.

BEFORE & AFTER DAILY BUILDING AVERAGE CONSUMPTION



BEFORE & AFTER DAILY COST



Monitoring & Verification

THE GLOBE AND MAIL

> “ SensorSuite® helps building owners and landlords to be as efficient as possible, especially in older buildings that don’t have modern, efficient systems and structures.”
>
> The Globe and Mail

To ensure savings continue and to assess the performance, SensorSuite’s WaterLink data will help identify if the flow or consumption starts to increase over time. While utility bills can provide an overview of water consumption on an annual basis, good utility management requires hourly monitoring. WaterLink data provides property managers with continuous feedback about their building’s performance through any internet connected device like smartphones. Hourly monitoring means that the effectiveness of conservation and retrofits can be tracked from day one and the results can be evaluated over time to identify issues such was water leakage. Unusual consumption patterns can also be flagged as they occur allowing costly issues to be identified and addressed, rather than months later when the utility bill arrives.

FOR MORE INFORMATION www.sensorsuite.com | sales@sensorsuite.com | 1.855.773.6767