

UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

Building Water Consumption & Benchmarking Analysis

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PLAN 527A

February 26, 2018

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Executive Summary

The purpose of the project was to analyze water consumption data for ancillary and tenant buildings on campus. For meaningful comparison, buildings were grouped by their primary function (Housing, Food Services, Athletics, or Tenant). The results of this study will be used to identify and prioritize opportunities for water conservation. There were three main research goals:

1. Analyze water use data to identify the largest users of water in both absolute quantity and water use intensity (WUI).
2. Identify opportunities to conserve water.
3. Provide recommendations for improving water conservation data collection and analysis.

The analysis was based on existing water meter data covering the period from March 2012 to March 2017. In terms of absolute water use, the top five ancillary and tenant buildings with annual water consumption were:

| Building | Yearly Usage (m³) |
|-------------------------------------|-------------------------------------|
| Vancouver Coastal Health (hospital) | 94,048 |
| Marine Towers | 76,652 |
| Thunderbird Residence | 71,507 |
| Aquatic Centre (old) | 32,662 |
| Doug Mitchell Arena | 24,001 |

For WUI, the results indicate a very wide range of values. Student residences fell between 5 and 93 m³/year/resident, with most falling between 20 and 60; tenant buildings fell between 2 and 84 m³/year/m², with most falling between 2 and 30. The very large variation in WUI may be caused in part by errors in allocating population or floor space to each meter, which was challenging within the scope of the project.

The data covers most of the auxiliary and tenant buildings on campus, though due to changes in building stock, excluded buildings, and limitations in data collection, it is not exhaustive. Where there are gaps, or data from different sources do not align and it is necessary to make assumptions, there are opportunities for error. However, taking this into account, the analysis provides an overview of water use and can be a useful guide for determining which buildings to focus attention on for further investigation and conservation. This project also generated a set of spreadsheets that can be used as a foundation for additional analysis, and recommendations to improve data consistency, data quality, and metering going forward.

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This SEEDS project report contains confidential information where a project participant(s) requested that the full research report not be made publically available.

For further information on this project report, please email the SEEDS Program

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