

open
Technologies

How Did it All Start?

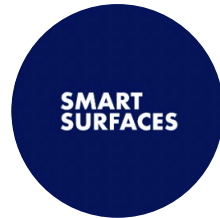
Building Benchmark BC

OGBS

The Open Green Building Society

OGBS

Technology:



Program Management:





- Results
- About
- Why Join?
- Sign Up!
- Disclosure Map

Year 2 of Benchmark BC was a great success! Click below to see the results and read the report.

See the Results

Partially Funded by Natural Resources Canada

Canada



BUILDING OWNERS AND MANAGERS

Valuable opportunity for property owners and managers:

Competitive insights

Gain insight into not just your own energy usage, but also how this compares to similar buildings

Capitalize on opportunity

Attract and retain tenants who value transparency and responsible building management

Gain awards

Receive recognition for your building's performance or your efforts to increase its performance



Welcome

Exec Summary

Benchmarking

Greenhouse Gases

City Story

Looking Ahead

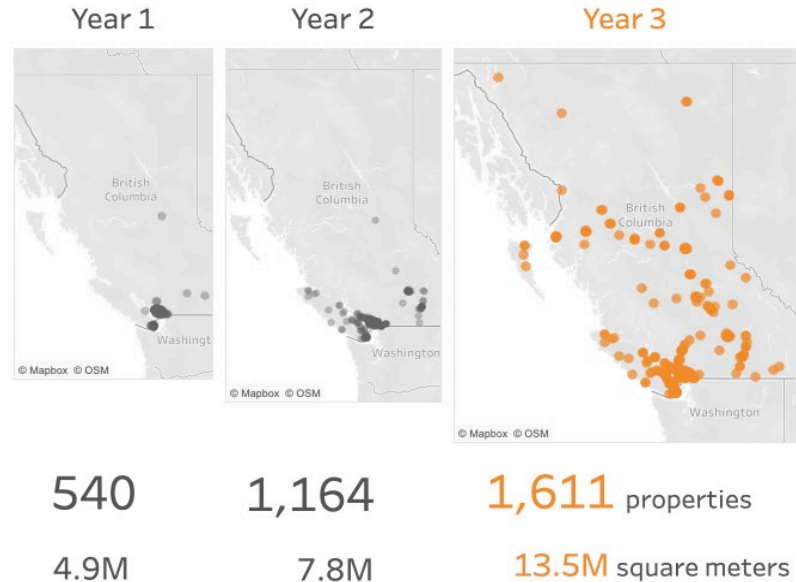


Building Benchmark BC Year Three Annual Report



From Humble Beginnings

- Program started in 2019 with a grant from NRCan
- OGBS played a convening role
- Started with 6 partners
- Grown to 21 partners



Why Did We Do it?

- Consistency for industry
- Build capacity in both Industry and government
- Economies of scale & elimination of duplicate services
- Demonstrate disclosure is not a big deal



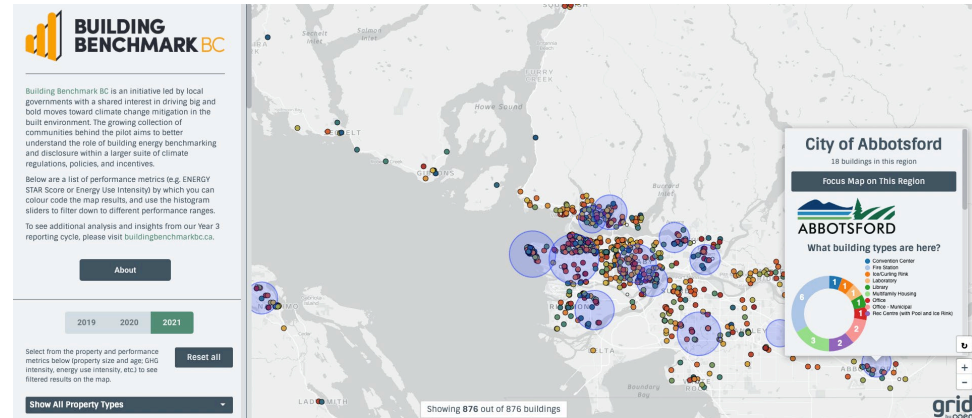
"Building Benchmark BC has been an important program in developing the capacity in industry and local governments to foster energy benchmarking and disclosure practices. It is great to see government and industry working and learning together."

Sean Pander

Green Building Manager, City of Vancouver

What we do?

- Coordinate partners
- Support partners in recruitment
- Lead marketing & communications
- Operate a help desk for participants
- Data QA/QC
- Conduct analysis
- Host public website



What have been the benefits?

- World class program at a fraction of the cost
- Aggregated, high quality data collection
- Brand Equity
- Co-learning from Peers



Communities of Practice

- Convening unique ownership groups:
 - Health Authorities
 - Universities
- Advocacy with utilities
- District Energy
- Emissions Factors



Focusing on “So what?”

- Providing value and insight to participants
- Enabling analysis for partners

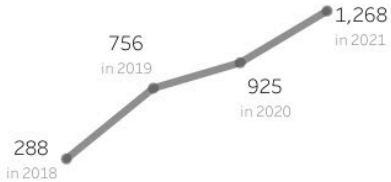
Select City

Program Year

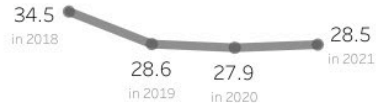
Data Type

Gross Floor Area (ft²)
 (click number to edit)

Yearly Participation (# properties)

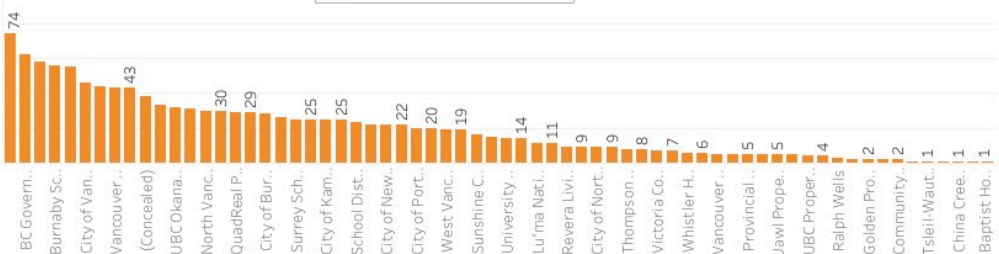


Yearly GHGI (avg in kgCO₂e/m²)

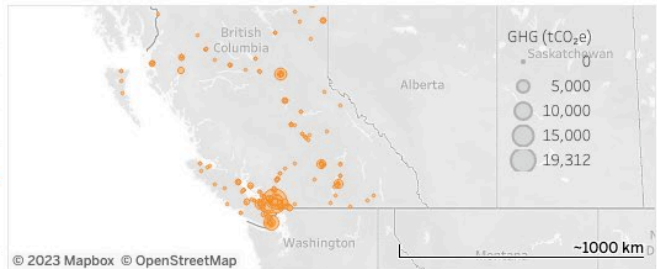


Click on an Organization

Or select one

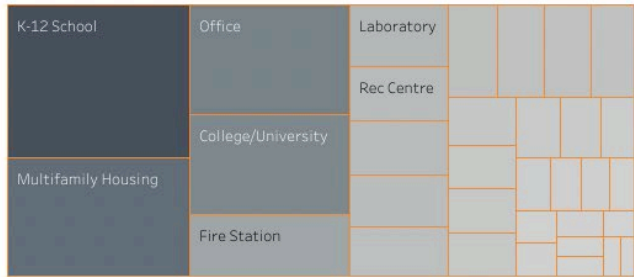


Total GHGs by Property

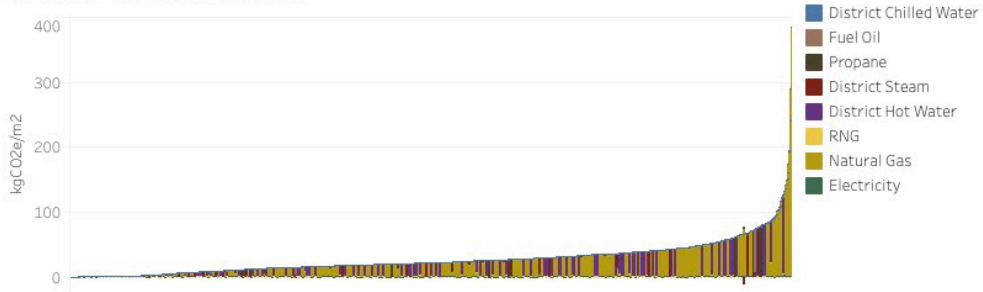


Click a Property Type

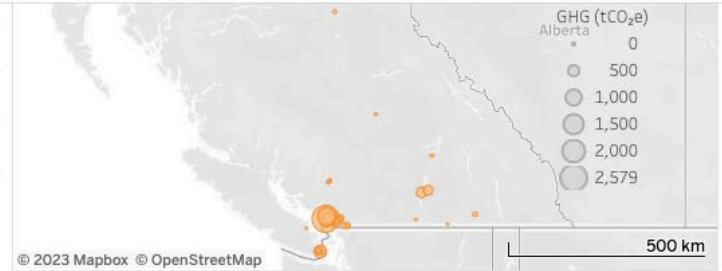
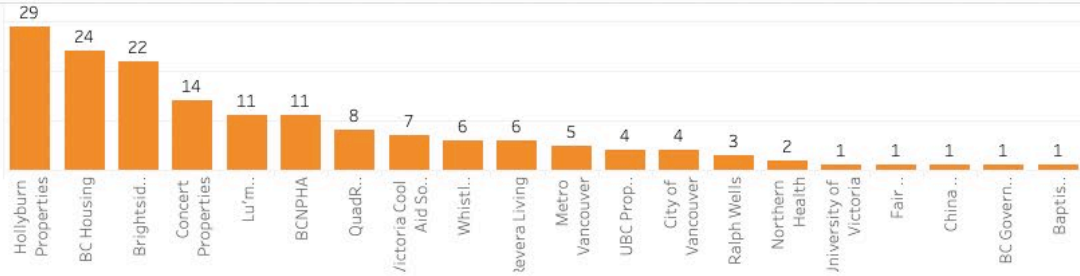
Or select one



View the GHGI Breakdown



Multi Family Housing Average in BBBC is GHGI 27.3

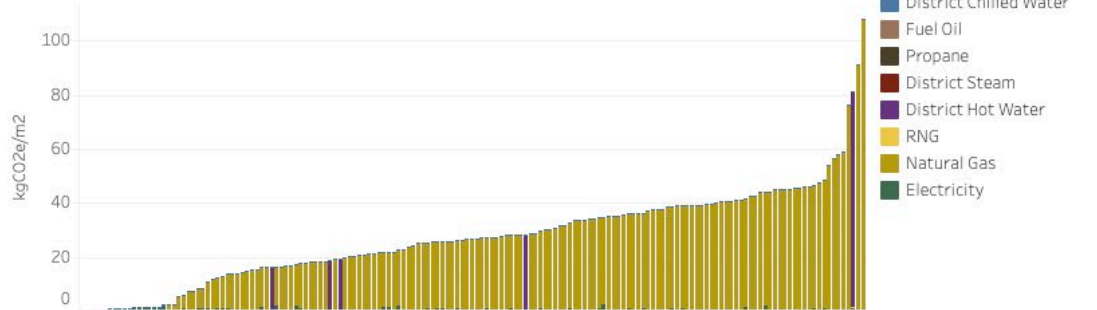


Click a Property Type

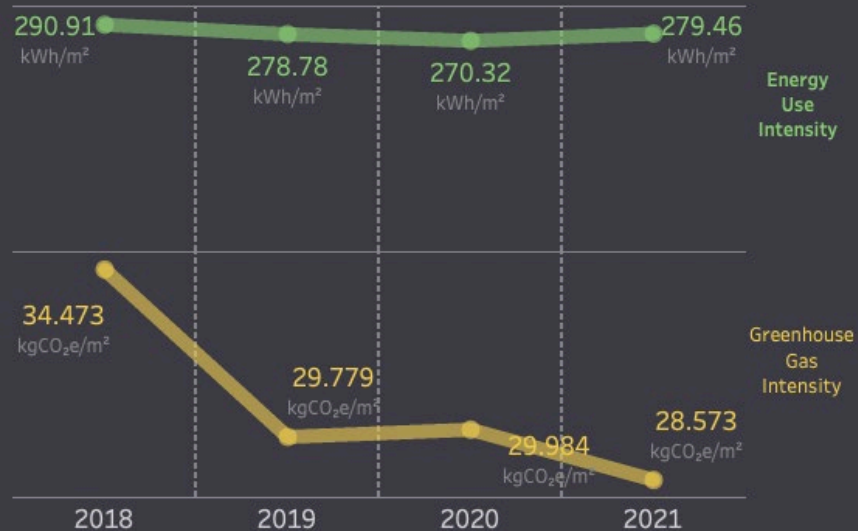
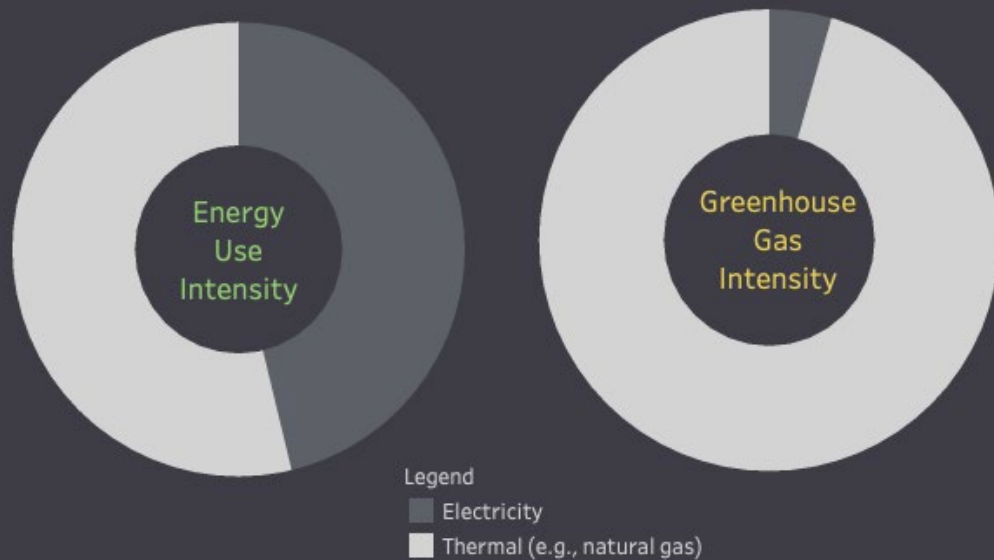
Or select one



View the GHGI Breakdown



Focus on Emissions



Key take-aways for analysis:

- Switch as much thermal load to electric as possible
- Planning ahead is key
- Align with capital replacement



Each building gets its own scorecard. The basics appear up here.

The "key stats" give you a snapshot of performance. This building improved its GHGI, but poorly compared to its peers.

Visualize how your building stacks up against the group on greenhouse gas emissions and energy.

Ever wonder where your energy goes? Find out if it's baseload, heating, or cooling.

Here, electricity consumption bumps up in the warmer months, as active cooling equipment kicks in.

Need some motivation? We do the math on your annual energy cost savings and carbon savings (if you were to achieve the top quartile of performance).

Building Name
555 Main St.

Reporting Period: 2020 Calendar Year
Property Type: Office
Square Footage: 173,766 sq ft
Year Built: 1963

85 Number of properties of the same type as yours.
-17% Your trend in GHGI since the previous year. (greenhouse gas emission intensity, kgCO₂e/m²)
68 / 84 Your rank in GHGI compared to the same property type. (where 1st is the lowest emitter)
525 / 854 Your rank in GHGI compared to the whole Building Benchmark IC dataset

Year-Over-Year
A snapshot of your yearly performance metrics compared to buildings of the same property type, including your recent trend. Note for percentile: a high percentile means "good" performance and 100% means "best performance".

	2019	2020	Since 2019 ^a
GHGI Greenhouse Gas Intensity	34.2 kgCO ₂ e/m ² 11th percentile	28.4 kgCO ₂ e/m ² 20th percentile	-17% avg building -2%
GHG Total Greenhouse Gas	604.4 tCO ₂ e 1th percentile	498.7 tCO ₂ e 10th percentile	-17% avg building -2%
Site EUI Site Energy Use Intensity	308.4 kWh/m ² 15th percentile	261.0 kWh/m ² 23rd percentile	-15% avg building -4%
ENERGY STAR	56 88th percentile	66 58th percentile	+10% avg building +12%

Energy use intensity is an indicator of energy efficiency, expressed as the energy consumed by the building in a year, divided by its total area.

How did you do compared to last year? Find out here...

... and see how that compares to your class.

Current Year Benchmarks
For the most recent year of data, a comparison of your building performance (the black line) against buildings of the same property type.

GHG Emissions Intensity
68 out of 84 properties
28 kgCO₂e/m²

Total GHG Emissions
77 out of 84 properties
499 tCO₂e

Site EUI
66 out of 84 properties
261 kWh/m²

Energy Star Score
51 out of 78 properties
66

Monthly Performance
A comparison of your building's monthly energy consumption, by energy type, year-over-year. Note that the data here is "raw," i.e., it represents billed data, and is not weather normalized.

Electricity Usage (kWh)

Natural Gas Usage (tCO₂e)

See your monthly performance...

... and the average performance of the group (the grey band).

Energy Load Breakdown
A breakdown of your building's monthly energy consumption, by energy type, into its main components: heating load, cooling load, and baseload. The data is modeled based on this year's performance.

Electricity Breakdown (kWh, Approximate)

Natural Gas Breakdown (tCO₂e, Approximate)

Greenhouse Gas Intensity Breakdown by End-Use
A breakdown of the total greenhouse gas intensity of your building by end-use. This graph shows you which end-uses are the main culprits for GHGI at your property.

Greenhouse Gas Intensity (kgCO₂e/m²)

Energy Load Breakdown

Electricity Breakdown (kWh, Approximate)

Natural Gas Breakdown (tCO₂e, Approximate)

How can you improve?
This section contains insights and recommendations based on comparing each of your energy loads (heating, cooling, baseload) to those from the same property type.

Heating Energy
13th percentile

Reduce: 210 tCO₂e/yr
Save: \$55,438,752/yr

If you achieved the 75th percentile (better than 75% of other buildings), you could save \$55,438,752 in yearly energy costs and reduce your yearly GHGI by 210 tCO₂e.

Electric Baseload
43rd percentile

Reduce: 16 tCO₂e/yr
Save: \$49,342,056/yr

If you achieved the 75th percentile (better than 75% of other buildings), you could save \$49,342,056 in yearly energy costs and reduce your yearly GHGI by 16 tCO₂e.

Natural Gas Baseload
58th percentile

Reduce: 65 tCO₂e/yr
Save: \$14,244,928/yr

If you achieved the 75th percentile (better than 75% of other buildings), you could save \$14,244,928 in yearly energy costs and reduce your yearly GHGI by 65 tCO₂e.

Electrical Cooling
6th percentile

Reduce: 6 tCO₂e/yr
Save: \$18,056,289/yr

If you achieved the 75th percentile (better than 75% of other buildings), you could save \$18,056,289 in yearly energy costs and reduce your yearly GHGI by 6 tCO₂e.

Visit <https://buildings@open.com> for more information about funding and capital incentives available to improve the performance of your building.

Natural gas baseload is typically due to domestic hot water use throughout the year.

Virtual Audits

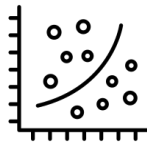
ESPM Data



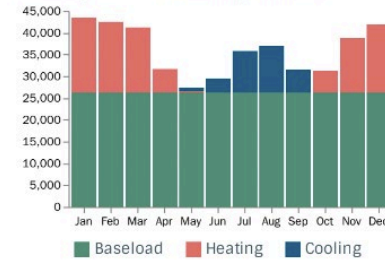
Weather Station Data



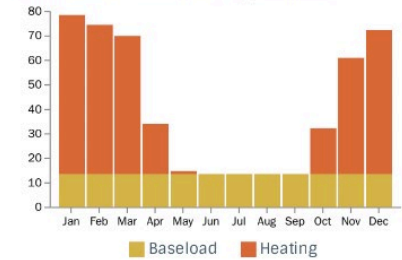
Regression Analysis



Electricity Breakdown (kWh, Approximate)



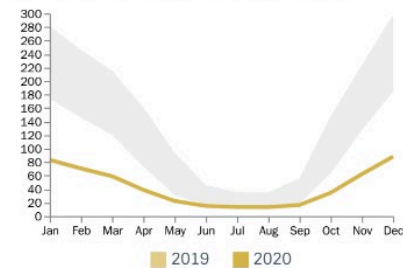
Natural Gas Breakdown (GJ, Approximate)



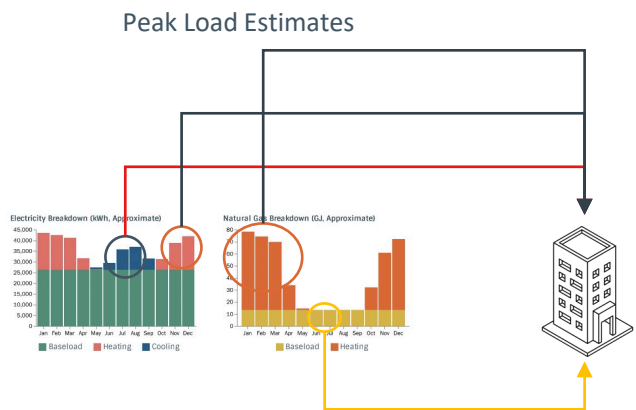
Electricity Usage (kWh, Raw Values)



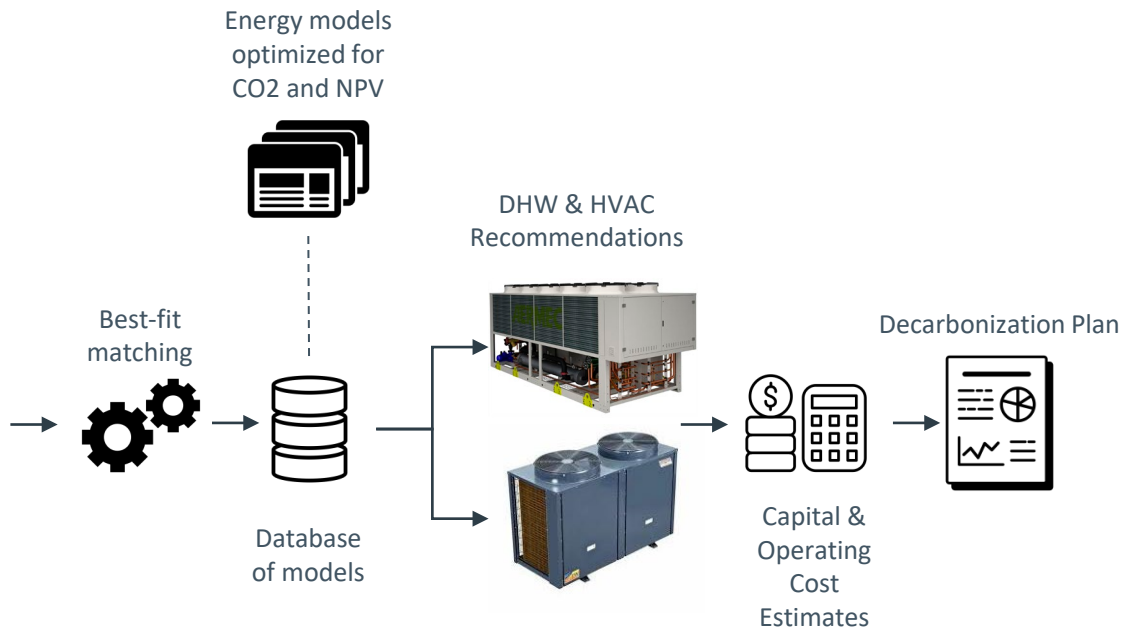
Natural Gas Usage (GJ, Weather Normalized)



Virtual Audits

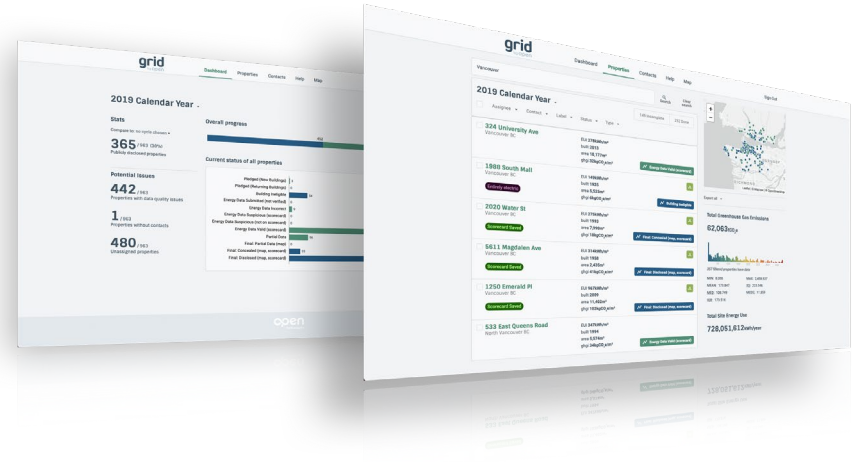


- Asset Data:
- Age
 - Type
 - Size
 - Etc.



What's Next?

- Reducing friction in the process
- Connections to solutions
- Continual improvement on building audits at scale
- Adding compliance modules



Thank you.

Dave Ramslie
604 307 7184
dave@opentech.eco

opentech.eco
buildingbenchmarkbc.ca



**BUILDING
BENCHMARK BC**