

EQ | BUILDING
PERFORMANCE

2018
CORPORATE
SUSTAINABILITY REPORT

PUBLISHED: 15 NOVEMBER 2019



Message from our President

Welcome to EQ Building Performance's inaugural CSR Report. At EQ we are committed to reducing human-kind's negative impact on the environment by making buildings better. We provide services to building designers, developers, and owners in the form of energy modelling, sustainability consulting, and building commissioning.

We are thrilled to be able to share this summary of the impact of our work over the course of 2018, and some additional information about our own operations. We hope that this report will serve to not only document the improvements made on these projects, but also to provide some insights on the progress of the local construction market towards a low-energy and low-carbon future.

We would like to thank all of our project partners for giving us the opportunity to work with them over the course of this past year, and we look forward to accomplishing and sharing more in the future.



Craig McIntyre
President

Who We Are

EQ's history began in 2005 as the consulting and engineering division of Provident Energy Management, a leading provider of sub-metering and building automation services.

The consulting division quickly grew to a practice with over 100 projects annually in the commercial, institutional, and multi-unit residential sectors, with a full-time staff of over 20 professionals. In 2017, we branched out to become EQ Building Performance.

We bring together architects, developers, and building owners to improve communities and create better buildings. Our team of professionals provide expertise through the integrated design process to guide project teams to explore and apply innovative solutions to design hurdles.

Our Work

Through the end of 2018, EQ has accomplished the following certification milestones:

LEED Consulting



TGS Tier 2 Consulting



TGS Tier 2 Compliance Evaluator



EQ Building Performance

EQ is proud to have joined over 150 new project teams in 2018. These projects included a variety of scopes of work, including feasibility studies, incentives, certifications, commissioning, research, and more. Throughout our portfolio of projects worked on in 2018, EQ was able to influence almost 2 million square meters of Canadian new construction.

In 2018, residential applications made up the majority of new development in the City of Toronto. Of a total 206 Site Plan Approval applications, 91 were identified as high-rise residential. A break down of proposed development GFA (where available) can be seen in Figure 1. Residential applications accounted for 70% of new development within the GTA, followed by commercial, industrial, and institutional respectively. When looking at market share on a GFA basis, EQ was involved in approximately 25% of proposed GFA in Toronto.

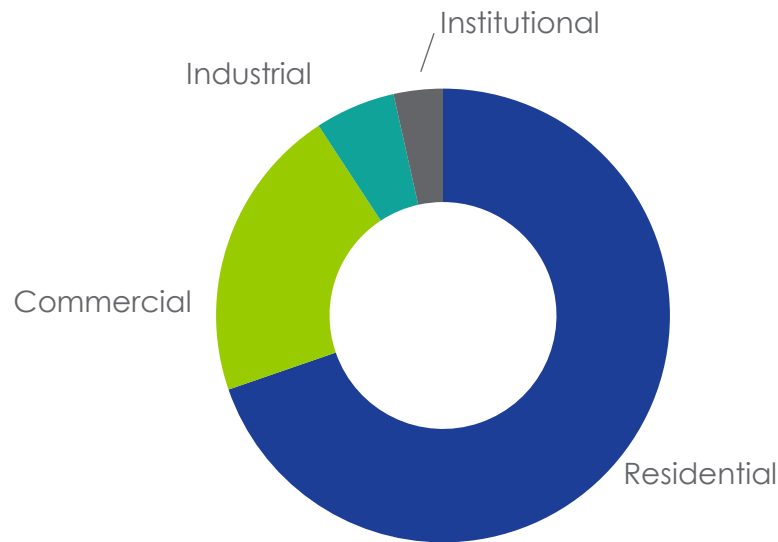


Figure 1 – Breakdown of SPA Applications by GFA (m²)

- 1,037,000 m²** Residential High-Rise
- 402,000 m²** Residential Low/Mid-Rise
- 108,000 m²** Commercial
- 54,000 m²** Institutional
- 303,000 m²** Other

EQ Project GFA Breakdown - 2018

When looking at development applications submitted to the City of Toronto, of the 91 residential Site Plan Approval applications received in 2018, EQ was identified as the sustainability or modelling consultant on 32 applications, far exceeding our competitors, as anonymously marked in grey below. A complete description of consulting firm diversity can be seen in Figure 2 below.

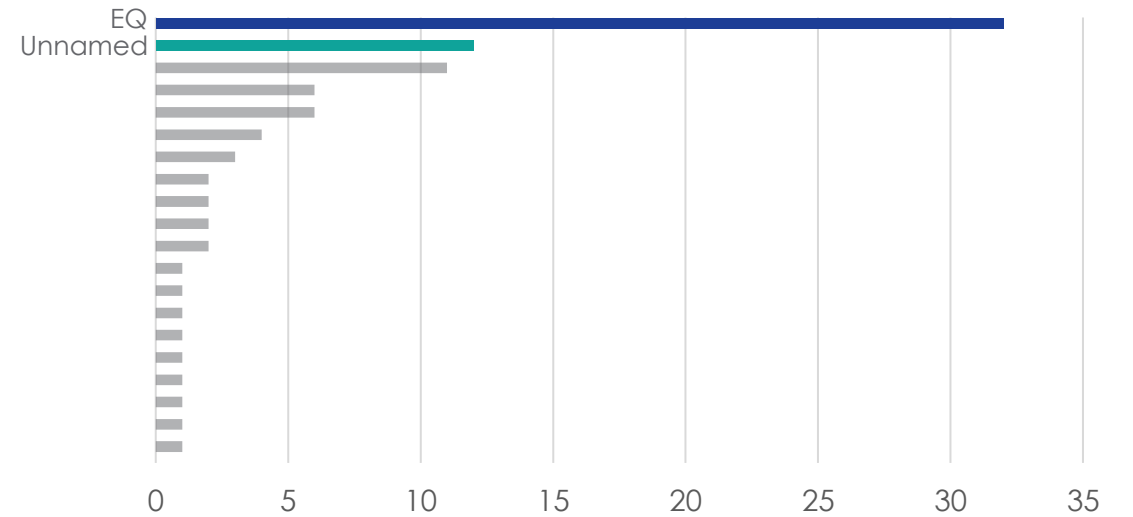


Figure 2 – No. of SPA Applications Listing Firms as Energy/Sustainability Consultant

What makes a Building “Green”?

At EQ, we believe that the key to a successful project is strong collaboration and early involvement to better inform design, which is why we always encourage our three primary service teams working together to deliver exceptional performance to your team.



2018 Project Highlights

EQ was involved in a number of interesting projects in 2018 from big to small. While every project is unique, a few notable projects EQ was involved with are:



Wallace Emerson Community Centre

Client: City of Toronto
Target: Toronto Green Standard v3 Tier 2
Our Role: Energy Modelling

This redevelopment of the Community Centre is being done as part of the new Galleria Mall redevelopment. With ample community resources, this building is aiming to exceed the higher performance level set for City-owned buildings.



Etobicoke Civic Centre

Client: CreateTO
Target: Toronto Green Standard v3 Tier 2
Our Role: Sustainability, Energy Modelling

The Etobicoke Civic Centre Precinct is being planned as a net-zero community and will set the path to be the precedent that demonstrates how bold energy goals can be achieved in a cost-effective manner.

484 Spadina

Client: Fitzrovia
Target: Toronto Green Standard v2.1 Tier 2, LEED v4 BD+C Silver
Our Role: Commissioning, Sustainability, Energy Modelling

This is a multi-unit residential building with a heritage portion at the podium located in downtown Toronto, at Spadina Avenue and College Street. This 15-storey tower is aiming to achieve both LEED and TGS Tier 2 certification.



We live in a rapidly changing world. In our quest to make all buildings better, we are excited to explore new technologies, design strategies, and even human behaviour that can improve building performance. Sustainability has evolved beyond just energy efficiency. By collaborating with other firms and publishing our work, we aim to better inform design, increase industry's understanding of buildings, and optimize building performance.



Port Credit West Village Community Energy Plan

This 72-acre former industrial site is being developed to include 2,500 residential units with commercial/institutional space. Having goals to build upon the principles of the City of Mississauga's *'Inspiration Port Credit'* vision, we helped to develop a master sustainability plan with community scale energy modelling and community scale energy advisory in partnership with Urban Equation.



ENERGY STAR® Multifamily High-Rise (New Construction) Pilot

While there has been a Multifamily High-Rise certification program from ENERGY STAR® available in the United States for some time, Canada did not yet have their own. As part of the Technical Committee, EQ helped in adapting the existing American standard to the Canadian market and was heavily involved in creating the new Program Guide and documentation.



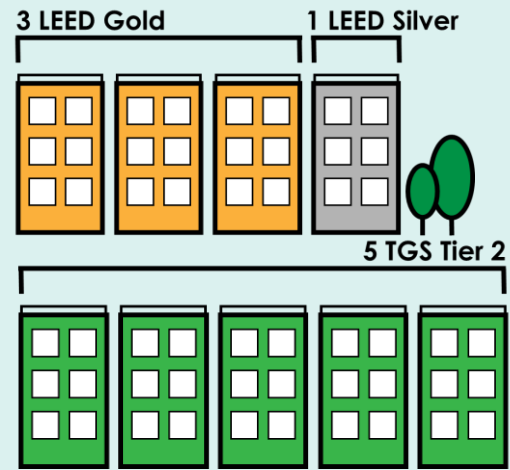
Sidewalk Labs Toronto Multi-Unit Residential Buildings Study

In an unprecedented study, Sidewalk Labs Toronto engaged EQ and Urban Equation to investigate how MURBs use energy, and compared metered energy readings to their modelled results. By analyzing this data at various levels, the team was able to determine and identify the performance gap – the difference between a building's actual energy use and the energy model prediction.

Sustainability

Building certifications can help demonstrate the quality and value of a building. Exceeding minimum building code requirements helps to set a building apart from the competition and create lasting value. Whether the focus is on occupant health & comfort, environmental performance, or energy, there are many certification options available.

In 2018, EQ achieved final certification on 9 projects.

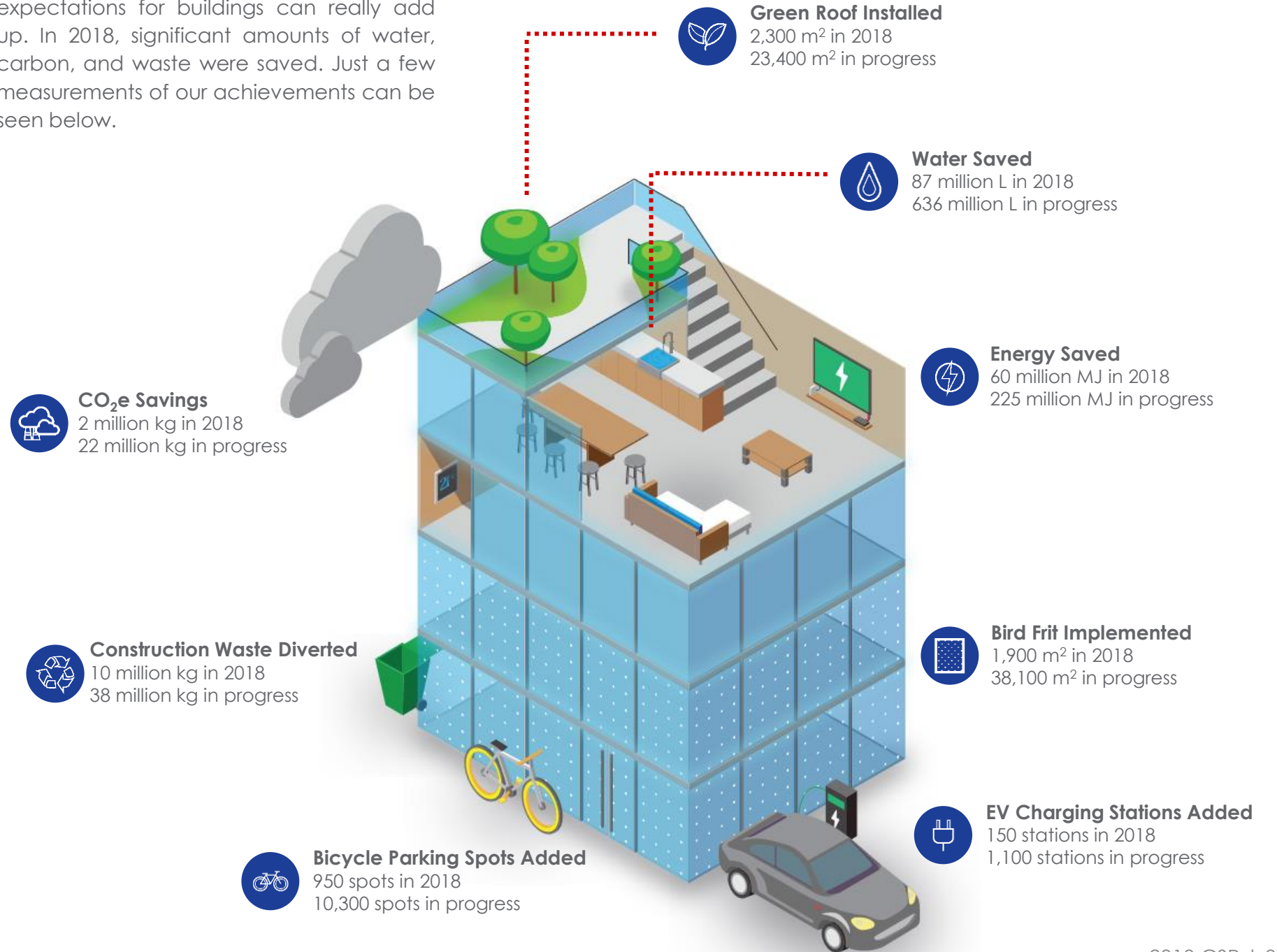


In 2018, EQ had an additional 48 projects in progress.



EQ Building Performance

Going above and beyond the minimum expectations for buildings can really add up. In 2018, significant amounts of water, carbon, and waste were saved. Just a few measurements of our achievements can be seen below.



Energy

Innovation and experimentation can be risky, especially with something as valuable and complex as a building. Whether pushing the boundaries of building performance or just trying to meet minimum requirements, EQ has helped guide a number of design teams towards the optimal solution. With increasingly strict energy targets, energy modelling is becoming increasingly important in early design.

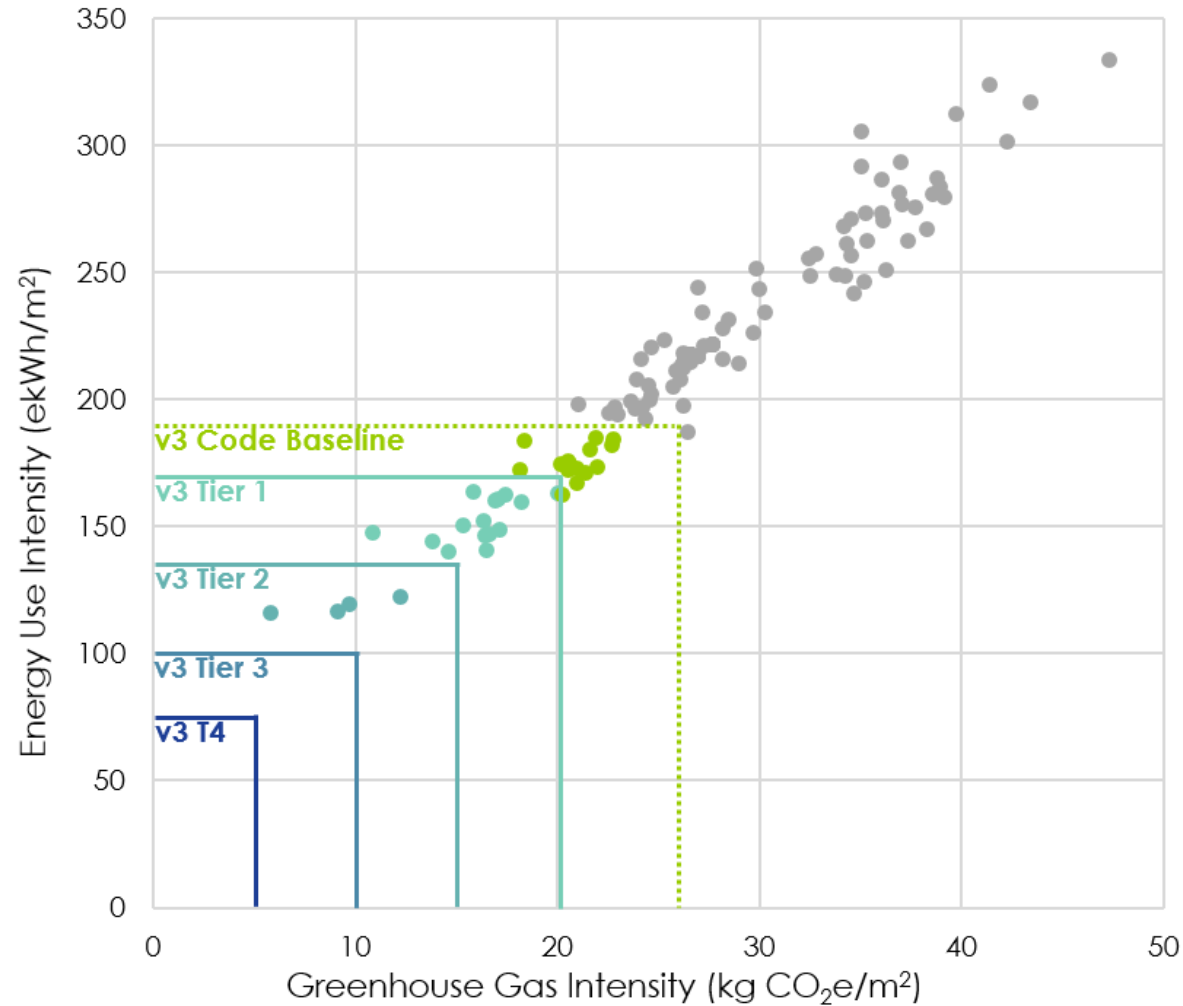


Figure 3 – EQ 2018 MURB Modelling Database (Absolute Performance)

The energy and carbon performance of multi-unit residential building (MURB) projects that EQ completed in 2018 show that not every building is created equal. Figure 3 demonstrates performance in comparison to the Zero Emissions Building Framework (see sidebar for detail) targets in the hopes of getting a snapshot of current development performance in Ontario.

While energy and carbon are shown to be correlated, the performance of each building varied dramatically. All of the projects in the database were compliant with the Ontario Building Code, yet the majority did not meet the predicted EUI of a code compliant building. This seems to confirm that relative performance paths (like those in the Building Code) are not performing as intended. At EQ we are focused on finding ways to help every project improve their performance.

In 2018 EQ was involved with over 150 Whole-Building Energy Models

What are Absolute Targets?

In May 2018, version 3 of the Toronto Green Standard was published, shifting Toronto away from a 'reference building' style energy code and towards a new targets-based approach. This change was advised by the Zero Emissions Building Framework (ZEBF), which was used to create the new TGS v3 targets-based performance for residential, office, and retail building archetypes.

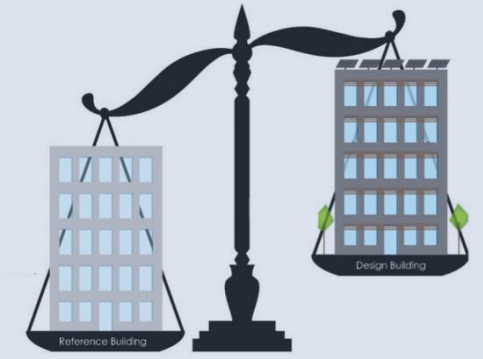


Figure 4 – Reference Path Overview

With increased focus on energy performance, not just relative savings, Energy Use Intensity (EUI) is one of the most important metrics for energy reporting. The movement to absolute targets also introduced Greenhouse Gas Intensity (GGI) and Thermal Energy Demand Intensity (TEDI) targets to focus on carbon use and building resilience.

Commissioning

Even the best-designed buildings don't always perform as expected. EQ's commissioning team helps to ensure that each building is performing optimally. Their thorough approach ensures that the building systems are installed and operating properly, which can help reduce operating costs and enhance building value.

In 2018, EQ's commissioning team found and reported 578 deficiencies through their regular site visits. While these ranged from large to small, every deficiency caught can help to improve the operating performance of a building and increase property management and tenants' utility cost savings.

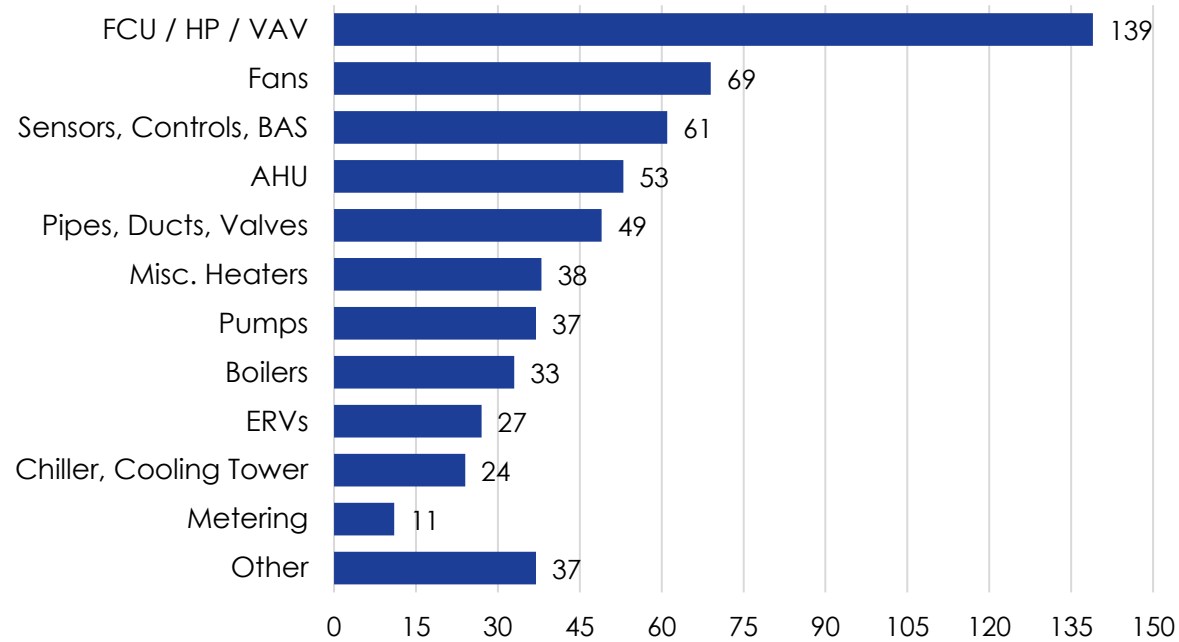
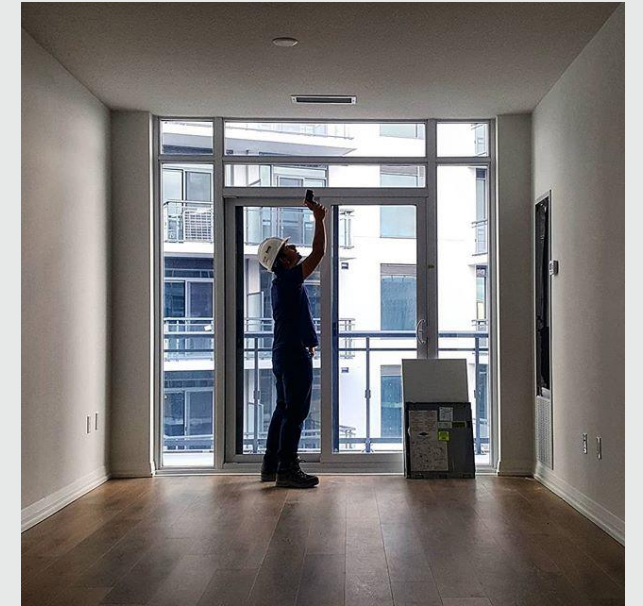


Figure 5 – 2018 EQ Commissioning Deficiency Breakdown

Why is Commissioning Important?

Commissioning is a quality assurance process that greatly benefits the process of bringing a building project vision to life from the design phase through construction and operations. With testing, verification, and documentation, the commissioning process can produce the following results for any new construction or existing building project:

- Energy and water consumption reductions and resulting utility cost reductions.
- Carbon emissions reductions.
- Building occupant health and comfort improvements (thermal, indoor air quality).
- Improved system and equipment function, reduced maintenance, and extended service life.
- Design stage building systems reviews and interference detection resulting in reduced construction phase change orders and slow downs.
- Better educated building staff/tenants through training and documentation.



According to NRCAN, a comprehensive 2009 study found that commissioning yields 13% energy savings for new buildings and 16% energy savings for existing buildings; payback periods of 4.2 years and 1.1 years, respectively. This makes commissioning one of the most cost-effective strategies available for reducing energy consumption and costs for buildings.

Our Team

EQ is proud to always hire the best person for the job, which has created a talented professional team made up of individuals from different cultures, age demographics, and educational backgrounds.

60%

Total Female Staff

67%

Total Female Management

While founded in 2017, we have been working together as a team to provide sustainability services to clients since 2005. Over the years, we have expanded our team with new talent and industry leaders and are proud to have a number of staff who have been here throughout the many milestones our company has achieved.

EQ has a knowledgeable and technical staff with a wide variety of accreditations in order to meet the needs of our clients. As of the end of 2018, these accreditations include:

- More than 50% of staff hold a LEED accreditation
- More than 30% of staff hold a P.Eng. or E.I.T
- Certified Energy Manager
- Certified Measurement & Verification Professional
- Certified Engineering Technologist
- Certified Engineering Technician
- Project Management Professional
- ASHRAE Building Energy Modeling Professional

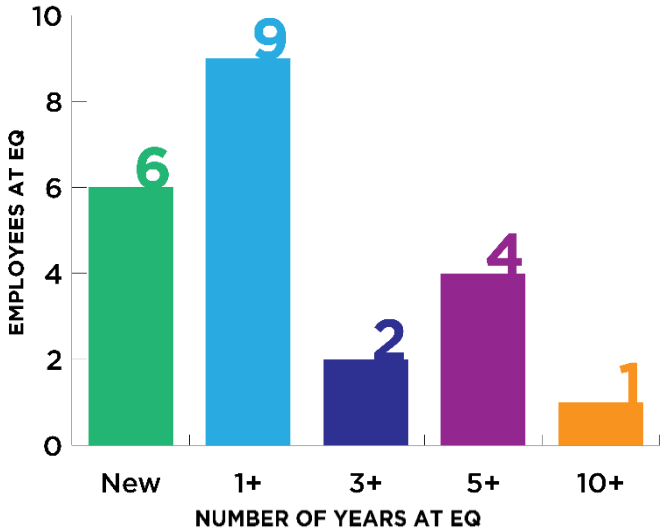


Figure 6 – 2018 EQ Staff History



Looking Ahead

Putting together our inaugural sustainability report has been a great learning experience. While we are proud of the content of this report, we know there is even more that we hope to report on in the future. Some of the goals we have for 2019 include:

- Company vision and values;
- Environmental impact of EQ's lifestyle and operations;
- Expansion of metrics and targets;
- Data on professional development; &
- Comparison of year-over-year data.

 eqbuilding.com

 [linkedin.com/company/eq-building-performance-inc./](https://www.linkedin.com/company/eq-building-performance-inc./)

 [instagram.com/eqbuilding/](https://www.instagram.com/eqbuilding/)

Appendix

Our Work

Data in this section of the report is largely based on the [Development Applications](#) page of the City of Toronto website. SPA applications first submitted in 2018 (with the first two digits of the application being 18) were reviewed in order to conduct this analysis. A total of 206 applications met this criteria.

For Figure 1, the relevant SPA applications were categorized by sector and applications were reviewed to extract GFA.

For Figure 2, the relevant SPA application energy modelling report and Toronto Green Standard checklists were reviewed and the consultant listed on them was noted. Where either of these documents was listed, or the consultant was unclear, the consultant was categorized as unknown. Of the total applications reviewed, EQ was the consultant on 34 of the 206 applications. Reviewing the residential (multi-unit residential and townhome) developments, 110 applications were submitted in 2018. Of these, EQ was the consultant on 32 of them.

EQ Project GFA breakdown was calculated by looking at projects completed in 2018 and categorizing the GFA of each project.

Energy

Targets from Toronto Green Standard v3 are based on the work presented in the [Zero Emissions Building Framework](#).

Energy and carbon intensity data presented in Figure 3 are pulled from EQ's internal database which tracks performance of projects. While a small percentage of these projects were under a previous version of the OBC, the large majority are directly impacted by current energy standards.

Sustainability

Conservation statistics are based on LEED and TGS project statistics. 'In 2018' values represent achievements for projects completed in 2018, while 'in progress' values represent projects still in design or construction as of the end of 2018.

Commissioning

Data presented in Figure 4 is based off of deficiency reports prepared through site visits during 2018.

The NRCan study referenced is titled *ecoENERGY Efficiency for Buildings* and is available [here](#) for review. This also references a 2009 study titled *Building Commissioning – A Golden Opportunity for Reducing Energy Costs and Greenhouse Gas Emissions* and is available [here](#) for review.

Our Team

Statistics presented on this page are representative of EQ staff on December 31 2018.

Image Sources

Cover Page – Image of The Well obtained from [here](#).

Page 5 – Image of Aqualina obtained from [here](#).

Page 6 – Image of Wallace Emerson CC obtained from [here](#).

Page 6 – Image of Etobicoke Civic Centre obtained from [here](#).

Page 6 – Image of 484 Spadina obtained from Kirkor Architects.

Page 7 – Image of Port Credit West Village obtained from [here](#).

Page 7 – Image of Energy Star logo obtained from [here](#).

Page 7 – Image of Sidewalk Labs Toronto obtained from [here](#).

Page 9 – Image of TGS Reference Path obtained from [here](#).