Architecture
Landscape
Interior Design

Suite 200, 300 Waterfront Drive
Winnipeg, MB Canada R3B 0G5
t. 204.885.9323 | www.ft3.ca

ft3 performance report 2019

ft3 recognizes the impact our operations and our designs have on the environment and we wish to make an effort to reduce and eventually eliminate the negative consequences. In order to understand the impact of our work we must first measure the performance of our operations and projects, learn how to improve the performance, and then take action.

Green Cleaning

An inventory of all existing cleaning products and supplies was conducted in December 2019/January 2020. The 2019 percentage of sustainable cleaning materials (e.g. trash bags, paper products) was 95% based on product cost. This is an improvement over 2018, when sustainable cleaning materials equated to 85% by cost.

However for cleaning chemicals, only 19% of met sustainability criteria based on product count, compared to 26% overall compliance since tracking began in 2017. Based on volume the numbers are slightly better: 20% of cleaning chemicals met sustainability criteria, compared to 11% overall compliance since 2017. Based on available cost data for 2019, only 9% of products complied, while an overall 15% of products have complied with sustainability criteria since 2017; however the cost accounting is incomplete so these percentages are not necessarily accurate. A comprehensive ft3 green cleaning policy (and scent-free policy) requires further development and documentation, and this is currently underway. As a large variety of green cleaning products are available and easy to source, this is an ideal area for ft3 to focus on improvements.

Hazardous Product Inventory

An inventory of all hazardous products was conducted in December 2019/January 2020 and safety data sheets were compiled as per best practice measures. The inventory will be updated again at the end of 2021. Measures to reduce the purchase and use of products that are hazardous to health, safety and the environment will be investigated. For example, there are several cans of compressed gas duster in the office, but these could potentially be replaced with a rechargeable can-less air duster system for reduced waste, greenhouse gas emissions, and expense. Existing fluorescent lighting in ft3's office contains an average of mercury content in all lamps of about 40 picograms per lumen hour, well below an earlier target of 70 picograms per lumen hour. Newer targets call for 35 picograms per lumen hour or less. In early 2020, ft3's office lighting will be updated, replacing most of the fluorescent fixtures with new LED fixtures. The decrease in overall hazardous mercury content in our office will be calculated and reported in the 2020 performance report.

Office Supplies and Equipment

Electric-powered equipment and accessories, such as ink cartridges, toner cartridges, batteries and computer components generally did not meet sustainability criteria during 2019. For all other non-electric office supplies, there was a decrease in items meeting sustainability criteria in 2019, only 24% by cost, while overall 34% of office supplies by cost met sustainability criteria since tracking began in 2017. One likely reason for this is that a more complete accounting of purchases is providing an improved picture of ft3's office supply use. Further improvements will be possible with the development of a more strategic office supplies purchasing policy. Additionally, as part of ft3's office renovation beginning at the end of 2019, we are making efforts to reduce printing and transition towards a more paperless environment through improved technology throughout the office. The impacts of this renovation will be tracked for future reporting. New office furniture and furnishings will also be tracked for the 2020 performance report.

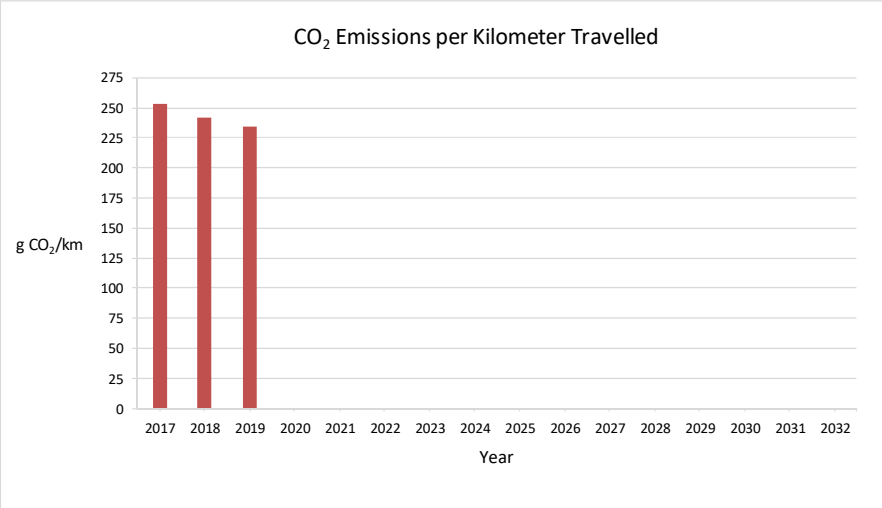
ft3 Event & Canteen Food/Beverage

Beginning in 2019, food and beverage purchases have been tracked. Overall, 2% of purchases by cost meet sustainable agriculture criteria. As a reference the LEED v4 target for food and beverages is 15% by cost. Our coffee carries the SCS Starbucks C.A.F.E. Practices label, but this is not recognized by LEED and therefore hasn't been counted towards meeting sustainability criteria. If the SCS Starbucks C.A.F.E. Practices label were to be recognized, then 47% of purchases by cost would meet sustainable agriculture criteria. The food and beverage purchases have not yet been assessed based on Fitwel criteria or WELL Nourishment criteria. Although one wellness measure ft3 has implemented includes providing a variety of complimentary fresh fruits.

Carbon Emissions

Project travel tracking: Air travel and vehicle mileage to meetings and site visits has been tracked since 2017. Vehicle mileage calculations are based on Natural Resources Canada fuel consumption ratings of the vehicle model year. However, trips are designated either city or highway, and an individual CO_2 emissions factor is used for each type of trip, rather than using the combined 55% city/45% highway factor provided in the ratings tables. For 2019, all recorded vehicle trips accounted for 10,017 kg CO_2 emissions.

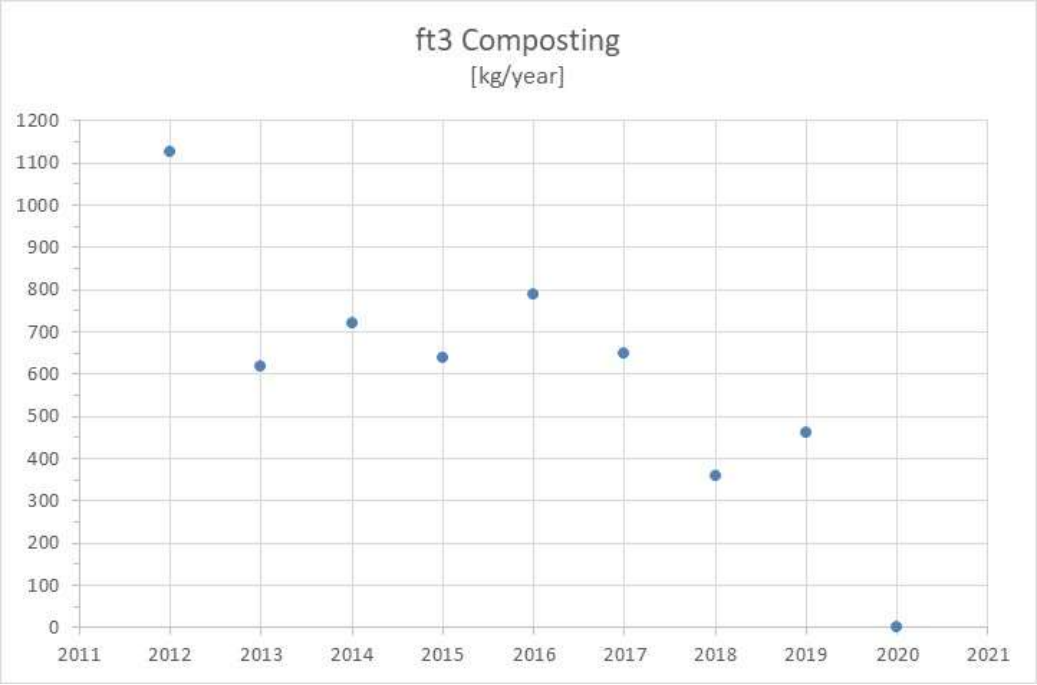
This is a slight increase over the annual average of 8,989 kg of CO_2 emissions calculated since 2017. However based on distance travelled, grams of CO_2 emissions per kilometer have steadily decreased since 2017 due to some ft3 staff switching to lower emitting vehicles. Total CO_2 emissions for air travel were determined based on the Carbon Footprint Ltd. calculator at carbonfootprint.com.



The total air travel CO_2e emissions for 2019 were 2,480 kg. This is slightly higher than the annual average of 2,210 kg of CO_2e emissions calculated since 2017. Rental vehicle emissions at travel destinations have not been tracked.

Energy bill tracking: ft3's electricity consumption for our second floor office space has been tracked since 2013. It is relatively consistent from year to year, ranging from a low of 101,745 kWh/year to a high of 107,961 kWh/year. Various strategies to reduce electricity consumption such as lighting or IT upgrades require analysis. Based on the CaGBC's Zero Carbon Building Standard emissions factor for Manitoba, annual emissions range from 358 to 379 kg CO_2e. Electricity carbon emissions since January 2013 total 2,883 kg CO_2e.

Composting: The amount of compost generated by our second floor office space has been tracked since 2012. Compost is picked-up and weighed by Samborski Environmental Ltd. on an as needed basis. Generally the total amount of material composted has been trending downward from year to year with a high of 1,125 kg in 2012 to a low of 360 kg in 2018. Reasons for this trend have not been analyzed. However from 2013-2017, the typical compost amount ranged between approximately 600-800 kg annually. Since January 2012, the total amount of waste composted is 5,365 kg. This equates to 2,754 kg CO_2e equivalent greenhouse gas emissions offset by composting, as calculated based on the Compost Challenge emissions factor, referenced from the Province of Manitoba's Recycling and Waste Reduction Discussion Paper.



Project Performance

Emissions calculations are based on the CaGBC's new Zero Carbon Building Standard. This is a forward thinking standard that aims to slow climate change and minimize its negative impacts by focusing on reducing GHG emissions associated with building operations.

Tracking ft3 new construction projects designed from 2010 to 2019 the running total annual carbon emissions are estimated to be 5,709,446 kg CO_2e/year, or 35.9 kg CO_2e/m^2/year for 158,820 m^2 of floor area which has either been modelled or measured. On average our projects produce 11.7 kg CO_2e/m^2 per year. Natural gas usage accounts for 74.2% of the emissions.

As a reference, the City of Toronto set 2017 baseline GHG (CO_2e) emission targets ranging from 23 to 28 kg/m^2 depending on the type of building.

The ft3 project emissions calculations above do not include any of the one-time green power purchases that have been made by some of the projects. The purchased RECs totaling 1,703,972 kWh are equivalent to 1,564,805 kg in avoided CO_2e emissions based on ZCB calculations. There were no new REC purchases by our projects during 2019.

For the Architecture 2030 Challenge, current overall progress towards meeting the 2030 Targets is 61%, based on ft3 new construction projects designed from 2010 to 2019. This is down slightly from 2018 when progress was at 62%, so further performance improvements are needed to be fully compliant with the requirements. However it should be noted that the Manitoba targets are generally more stringent than the Canadian average targets, making them difficult to achieve, especially since we have a more extreme climate than many other parts of Canada. For example the Manitoba target for a residential apartment building is 19% lower than the overall average Canadian target. In any case, giving preference to electric building systems over natural gas combustion (74.2% of project CO_2e emissions) would help to achieve the 2030 Challenge goal of carbon-neutrality by 2030 (using no fossil fuel GHG emitting energy to operate).

One ft3 project participating in the CaGBC's Zero Carbon Buildings Pilot Program was on hold during 2019, but is expected to start up again in 2020.

In 2019, one project was undergoing review for a targeted LEED Canada NC 2009 Silver certification, and one project was submitted for a Green Globes certification review.

ft3 impacts not yet quantified:

- Potable water use – install a sub-meter to measure consumption?
- Daily commute tracking – regular staff survey is in development, align with arc?, use older existing ft3 spreadsheet as template for tracking/calculations? use the GoManitoba commute tracking tool? (Vehicle info has been collected for staff site visits). Convert results to kg CO_2e
- total waste diversion amounts – no onsite scale to weigh materials sent to landfill and recycling facilities
- Wellness measures – Walking Group, yoga, reno improved acoustics, lighting, ergonomics, sit/stand, daylight, views, etc.