



THE ENERGY OF THINGS

OFFICE TOWER CASE STUDY

1177 West Hastings Drive - Vancouver, BC



PROJECT SUMMARY

The owner of this high rise commercial building in the downtown core of Vancouver, Canada is dedicated to updating, improving, and radically transforming the energy use of an iconic and historic building, which has been a part of the city skyline for over 40 years. The building comes with many challenges such as: concrete ceiling troffers with in-slab wiring; recessed unfinished fixtures concealed above reflective coverings that no longer comply with building standards; as well as outdated light quality and rendering from T8 style fluorescent lamps.

The City of Vancouver has recently adopted progressive standards for commercial building retrofits. Improvements for this skyscraper require high efficiency lighting and smart controls for aggressive dimming, occupancy/vacancy control, daylight linking, and plug load circuit control. As a result, the owner and facility management team conducted considerable research for advanced wireless control solutions that would meet updated codes, achieve far-reaching energy savings, and drastically improve the indoor working environment.

PROJECT GOALS

- Reduce energy with high-efficiency LED fixtures
- Integrate advanced sensors and wireless controls
- Improve indoor working environment
- Access to real-time energy data
- Easy installation and fast wireless commissioning
- Lower operating and minatenance costs

ADVANCED CONTROLS STRATEGY

Traditional office buildings tend to be over-lit, contributing to unnecessary energy losses. Low-quality fluorescent lighting can also lead to uncomfortable and unproductive working spaces. With Amatis' Smart LED Lighting and 6LoWireless™ Controls this office tower now has comfortably lit and more productive working environments with high quality 90+CRI LED lights and advanced controls that automatically dim entire zones or individual fixtures to levels that save energy. Amatis sensors and smart controllers raise and lower light levels based on occupancy/vacancy and available daylight, and the smart lighting solution allows for easy specification and commissioning of open space work areas, private offices, conference rooms, hallways, and common space.

The Amatis control app and 6LoWireless switches give users hands-on control where it is needed along with the ability to program unique schedules and dimming profiles based on the building's design. With an entire turnkey solution, Amatis offers the most advanced functionality at a very low cost, enabling a quick return on investment for the customer.

RESULTS

The fluorescent fixtures concealed above outdated reflectors created poor light and color quality. Previously each 5'x5' concrete troffer had two 16-watt T8 lamps (32W per fixture) powered at 100% brightness. The building, originally constructed in the 1960's did not have wiring suitable for line-voltage dimming and it is cost prohibitive to upgrade the in-slab wiring.

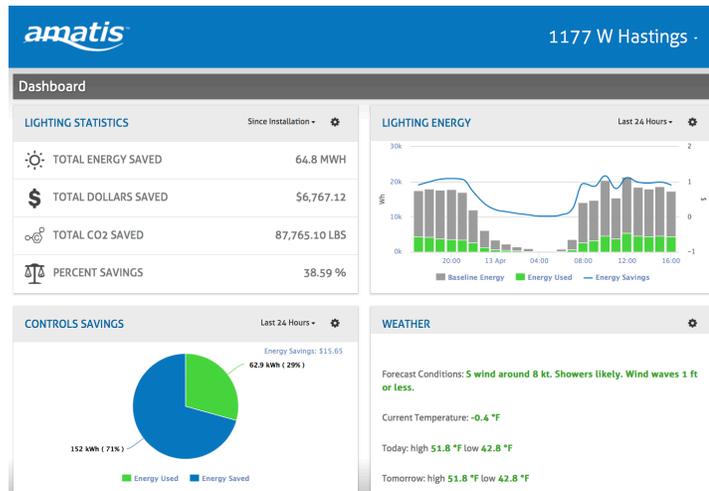
The new 2'x 2' LED panels came pre-fitted with Amatis 6LoWireless™ Smart Drivers. The fixtures are recessed into the troffer, giving the indoor space more height and a more comfortable feel. A percentage of the fixtures came pre-fitted with Amatis sensors for motion, light, temperature and humidity. The installation process was optimized for speed, significantly reducing labor cost and interruptions.



BEFORE & AFTER



REAL-TIME ENERGY DASHBOARD



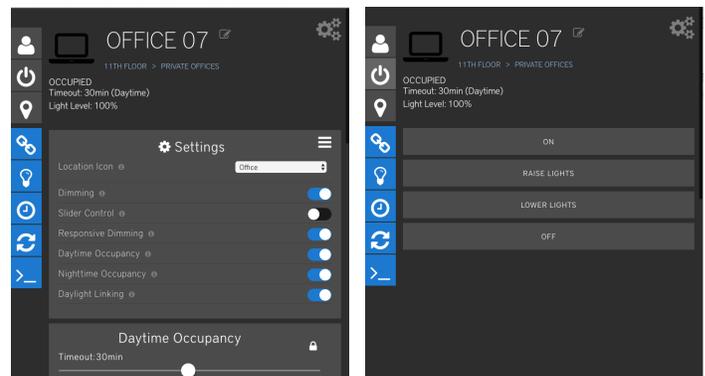
The Amatis Energy Dashboard shows real-time energy data including daily energy use, energy savings, and other statistics. Baseline information is collected before the lighting retrofit and energy savings is recorded every hour based on real-time information from Amatis devices.

"Our company is committed to providing the best possible work environment for our tenants while also going above and beyond the requirements for energy efficiency and sustainability. Amatis' lighting and wireless controls helped us achieve our goals at a fraction of the cost compared with competing solutions."

- Kenric Lee, Chief Engineer

CONTROL & COMMISSIONING APP

Installation and programming is completed using Amatis control and commissioning app. Programming and reprogramming can be done by nearly anybody on a smartphone or computer. Installers simply scan QR codes on devices and enter the physical location into the app. Programming is completed by specifying appropriate light levels, occupancy timeouts, daylight linking values, and time scheduling all updated wirelessly to the individual devices.



LIGHTING & CONTROLS HARDWARE

- 300 90+CRI flat panel LED fixtures (AM-LED-2x2)
- 300 6LoWireless Smart Drivers (AM-6LoDRIVER-347V)
- 45 Amatis Wireless Switches (AM-TINY-SWITCH-SM)
- 116 Amatis Motion & Light Sensors (AM-SENSOR2-ML)
- 4 Amatis Border Routers (AMBR)

LIGHTING ENERGY USAGE (average numbers)

Before	7.3 MWh per month
After	2.1 MWh per month
Total Savings	5.2 MWh per month