

GBTN 04

WIRELESS LIGHTING CONTROLS

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Project Typology:	Residential New
Project Locations:	Calgary and Edmonton
Project Innovation:	Wireless Lighting and Smart Sensors
Project Lead:	Levven Electronics Ltd
Project Partner:	SAIT Polytechnic
Building Owners:	Brookfield Properties Development, Mattamy Homes Canada

GREEN BUILDING TECHNOLOGY NETWORK

PROJECT OVERVIEW



PROJECT MOTIVATION

The Levven project, located in neighbourhoods in Calgary and Edmonton, received funding for the incremental costs of installing and studying the energy and greenhouse gas emissions reduction potential of wireless home lighting controls.

The goal was to demonstrate to industry that alternate technologies can be efficient and cost-effective. The whole home “smart” lighting control system leverages wireless technology, requires minimal power to run, reduces material use, and simplifies the construction process.

From manufacturing to training and installation, Levven's wireless switching products are a compelling and disruptive innovation for the new build market.

— TYLER WILSON, PRINCIPAL INVESTIGATOR AT
SAIT APPLIED RESEARCH AND INNOVATION SERVICES

22%

**LIFETIME GREENHOUSE
GAS REDUCTIONS**

PROJECT INNOVATION



This project investigated two aspects of greenhouse gas reductions:

- Embodied carbon of home lighting traditionally wired versus lighting utilizing a wireless system
- Electrical energy consumption of the home occupants with and without wireless light switching

Homes constructed with Levven's Switched Right® solution reduced embodied carbon emissions in the electrical installation by 13%–35%, compared to conventionally wired systems, by eliminating switch-leg wiring and electrical boxes.

Key Findings

- Builders who participated in the study were able to confirm that the **Levven system reduced build cycle days and reduced materials and embodied carbon** which supports emissions reduction goals.
- **Labour time was reduced** by 16%–33% during rough-ins.
- **Training is an integral part** of realizing the full benefits of this technology, particularly to reduce time of electricians on-site. Although 18 electricians had been trained through a learning management system, due to the scale of the project 23 additional electricians were required to learn on the job which led to higher install times than expected.
- The **dynamic and fast paced build cycle created significant challenges** for clean and consistent data collection which limited the findings of the study.
- The **project team was unable to determine operational energy savings** due to a number of unforeseen challenges.

ADDITIONAL RESOURCES



Visit the [Resource Library](#) to find resources on this project and others like it

ABOUT THE TEAM

Take a look at this project to understand the project teams vision for a low-carbon built environment.
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