

**Project Typology:** 

Institutional | Retrofit

**Project Location:** 

Edmonton

**Project Innovation:** 

Artificial Intelligence Shading

**Project Lead:** 

Al Shading

**Project Partner:** 

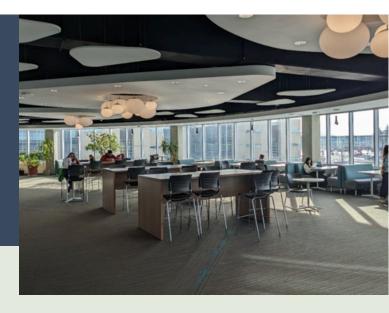
NAIT

**Building Owner:** 

NAIT

# GREEN BUILDING TECHNOLOGY NETWORK

## PROJECT OVERVIEW



#### PROJECT MOTIVATION

According to the US Department of Energy, 30% of energy loss in buildings is through windows. Revenue for the window shades market in the Canadian market in 2023 is expected to be US\$ 1.79 billion. Al Shading is an all-year-round energy savings solution. In Summer, the control strategy blocks the solar heat. In Winter, it harvests the solar heat to reduce the demand of HVAC. However, the public doesn't realize the energy savings potential of the Al Shading system.

The product demonstration at NAIT was a good opportunity to demonstrate the technology. The next step is to scale up the project size to a whole commercial building. Then, it can be a very convincible and presentable case study to the market. With this case study, we believe we could incorporate 180 buildings or more in the coming 5 years.



# Highly satisfied with technology deployment, the overall performance and energy savings.



- NAIT

	UPGRADE ESTIMATED	UPGRADE ACTUAL
ANNUAL ENERGY CONSUMPTION IN GJ (% SAVINGS)	13.3	24.1
ANNUAL GHG EMISSIONS IN tCO2e (% REDUCTIONS)	3	5.4

#### **PROJECT INNOVATION**



Al Shading's autonomous operated window shades are on the same path as SSRIA in the goal of achieving energy savings and greenhouse gas reductions through innovation.

The devices at NAIT use solar panels as the power supply for the shades' operations. In future projects, Al Shading will use solar panels to supply the power for South-facing windows' shades to make a good use of renewable energy. This technology is applicable to all kinds of buildings.

### **Key Findings**

- Consider the **social and economic impact on local communities**, and seek partnerships that extend beyond the project's immediate scope.
- **Engage a diverse range of stakeholders**, including end-users (in this case students), to understand the technology and goals for the project.
- Prioritize a **comprehensive stakeholder engagement strategy**, ensuring that all relevant voices are heard and considered in decision-making processes.
- Successful implementation of autonomous system requires careful consideration of technology integration and adaptability to meet evolving needs, especially the wireless connection of devices.
- Establish a **detail planning on the wireless connection** for the devices.
- Measure all the windows to make sure there is no surprise during the installation.
- Consider **measure and validation** in the project site selection.

#### **ADDITIONAL RESOURCES**



Visit the <u>Resource Library</u> to find resources on this project and others like it.

#### **ABOUT THE TEAM**

Take a look at two interviews conducted with the team and get to understand their collaboration and vision for a low-carbon built environment.

Team Lead
Team Collaborators

Connect with this project

