Mitrex Case Study

Mitrex BIPV Facade for St. Mary's University

Mitrex eFacade PRO & IGU Solar Glass

Project Overview

St. Mary's University retrofitted the 50+ year-old Loyola Residence with a modern, energy-generating facade—transforming a deteriorating exterior into a showcase of sustainability. Working with DSRA Architects and EllisDon, the project focused on upgrading the building's south-facing wall, which featured a staircase curtainwall and aging cladding. The final installation used Mitrex BIPV panels with a custom sea foam green finish, seamlessly integrating solar power generation into a high-performance, visually appealing envelope. With a 90.2 kW system generating 73,300 kWh annually, this retrofit offers long-term energy savings, modern aesthetics, and a replicable model for campuses across North America.

PRODUCT USE:
eFacade PRO (BIPV Facade) & IGU Solar Glass

PROJECT LOCATION:
Halifax, Nova Scotia, Canada

OWNER / DEVELOPER:
St. Mary's University

GENERAL CONTRACTOR:
Markland Construction

ARCHITECT:
DSRA Architects

BUILDING TYPE:
High-Rise

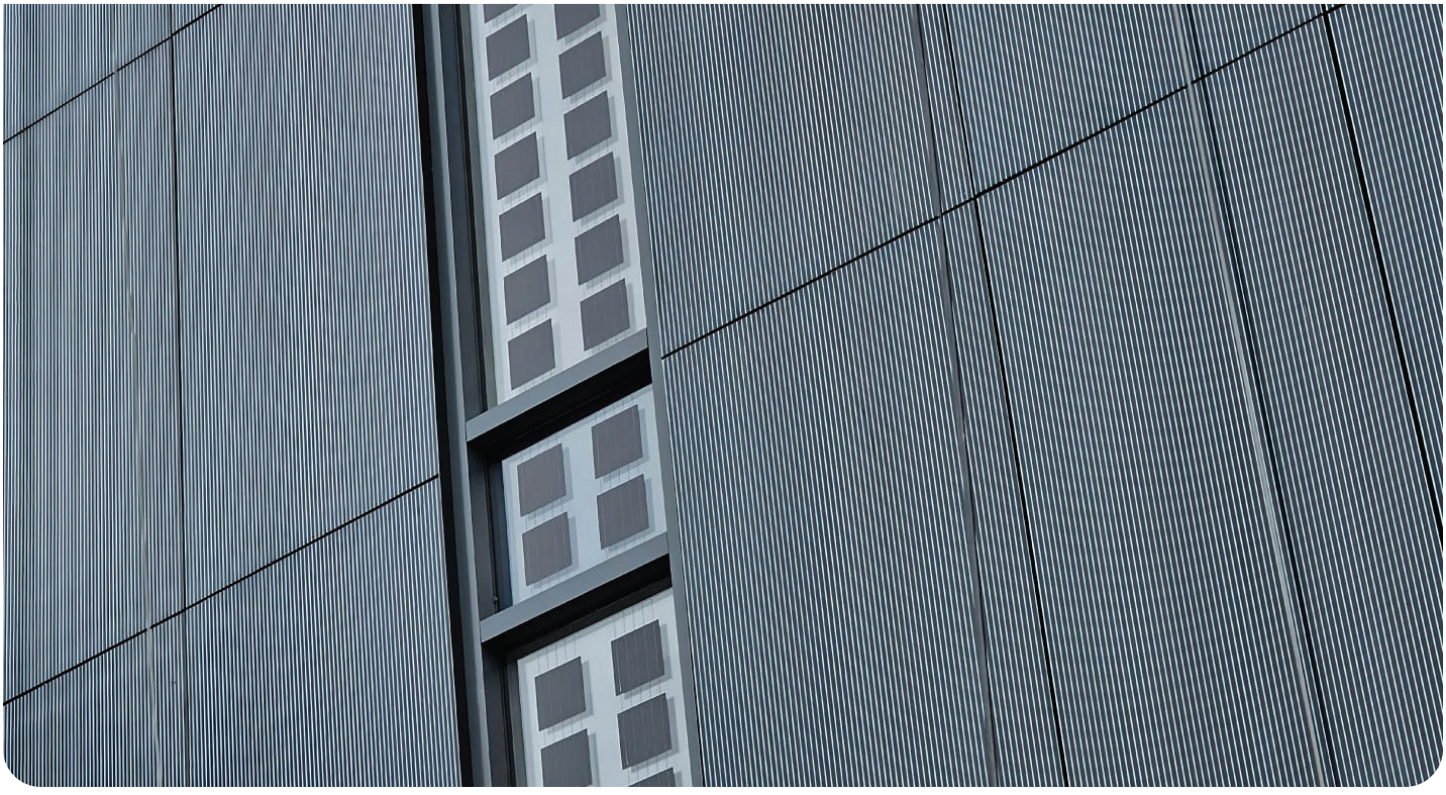
PROJECT SIZE:
6,554 SQFT

POWER OUTCOME:
Facade Power: ϟ 88kW
IGU & Spandrel Power: ϟ 2.2kW

COMPLETION DATE:
2024

Project Challenges	Mitrex Project Solutions
• **Aging Infrastructure:** The original 50+ year-old facade was deteriorating, posing structural and aesthetic issues.	• **Retrofit Solution:** Mitrex replaced the cladding with an integrated BIPV facade that generated energy and met performance and safety needs.
• **Limited Space:** The original plan focused on rooftop solar panels. However, the available roof space could only support a 28 kW system—falling far short of the energy goals.	• **Facade-Integrated Energy:** Mitrex presented an alternative option: 90.2 kW on the building facade using just 6,554 SQFT.
• **Design Requirements:** DSRA Architects required the facade to feature a custom sea foam green finish—while ensuring that the materials would integrate seamlessly with the existing structure and still meeting sustainability goals.	• **Performance-Based Design Testing:** Working with DSRA Architects, Mitrex produced tailored samples to match the desired sea foam green in multiple patterns. In-depth testing with 3mm and 6mm sea foam green lines and dots integrated into the panels was then conducted to understand the effect on performance. This approach ensured a visually appealing facade that met both aesthetic and sustainability standards.
• **Sustainability Requirements:** The client's strict carbon reduction goals added a layer of complexity, requiring a solution that not only looked good but also generated substantial energy savings.	• **Energy Achievement:** The installation of the 90.2 kW BIPV system resulted in an annual production of 73,300 kWh, significantly contributing to the building's energy efficiency goals and providing long-term sustainable energy solutions.

Key Takeaway: *St. Mary's University transformed a failing facade into an energy asset—showing how 50+ year-old campus buildings can be retrofitted with smart, sustainable solutions. This project demonstrates that BIPV can deliver architectural elegance, performance, and ROI, making it a compelling model for post-secondary institutions across North America.*



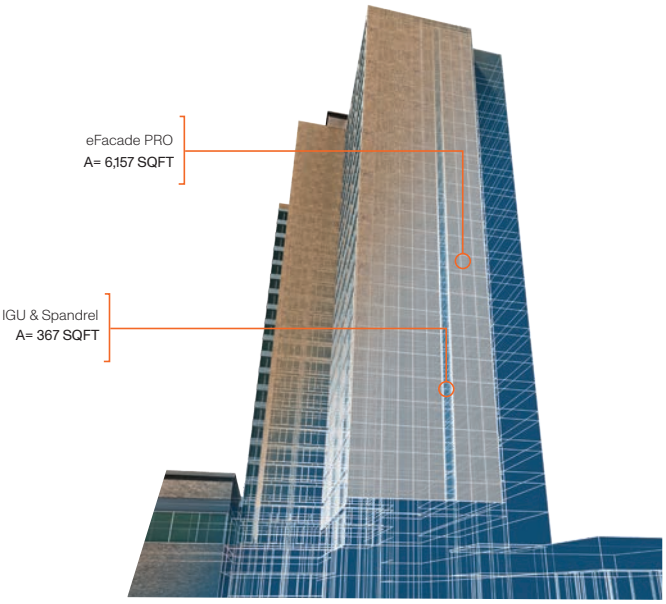
Facade Design Process

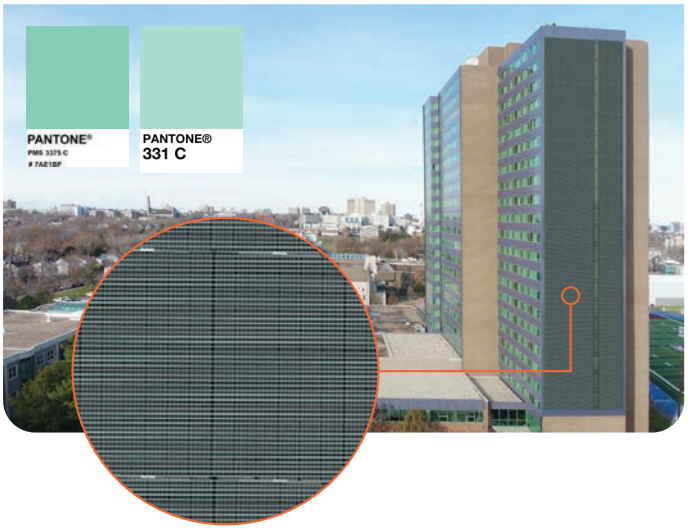
1. Original Design

The Loyola Residence required a facade upgrade. Initial rooftop panel plans yielded just 28 kW—insufficient to meet client goals. St. Mary's University originally wanted to use a rooftop solar panel system or alternatively a ground-mounted system covering approximately 15,000 sqft of the campus's existing space. Both of these options had limitations, as roof space on the building was limited, and the usage of that much campus space for the ground-mounted system was impractical.

2. Incorporating BIPV

Mitrex presented an alternative to the originally planned 28 kW rooftop system and the 96 kW ground-mounted solar field covering 15,000 SQFT: an optimized 90.2 kW BIPV facade solution. This approach combined Mitrex's eFacade PRO and Solar Glass (IGU Spandrel Power) products. Through Mitrex's Design Assist service, it was recommended that the Solar Facade utilize CladiShield (rainscreen system), while the Solar Glass panels were installed using Claditized (unitized system). This ensured a seamless integration of the BIPV panels with the building's facade. By utilizing only 6,554 SQFT of vertical facade space, the solution efficiently maximized power output, optimized available space, and provided the aging structure with an aesthetically enhanced appearance.





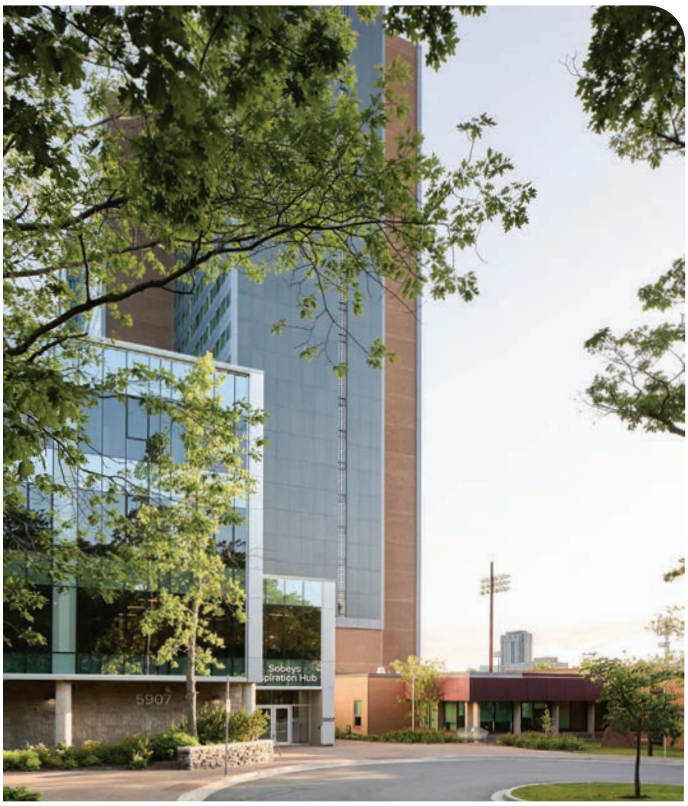
3. Facade Optimization

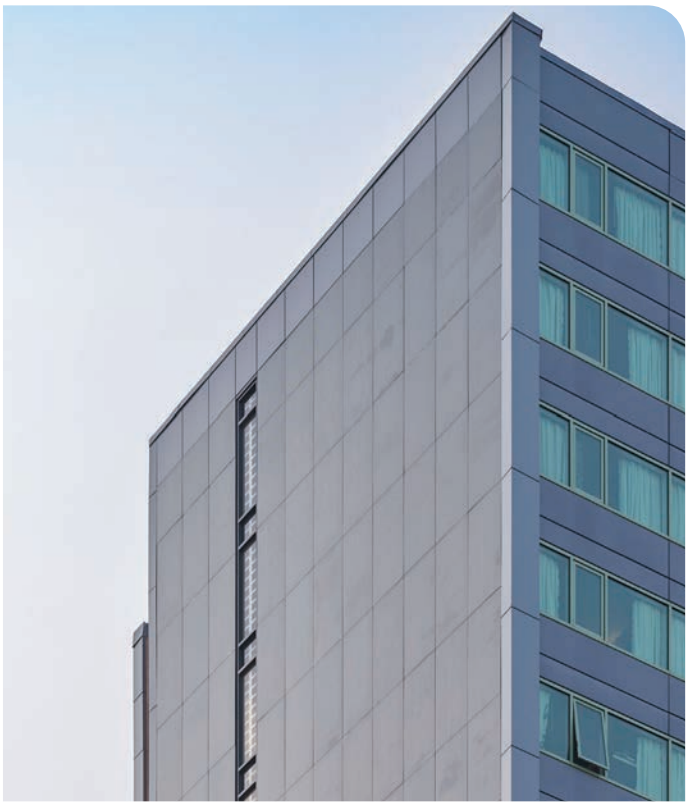
DSRA Architects envisioned using a specific Pantone sea foam green as an accent color for the building's facade, aiming to maintain the aesthetic appearance of a solar-powered building by keeping the solar cells visible. To accommodate this vision while preserving optimal energy performance, Mitrex conducted extensive testing of multiple sea foam green patterns, evaluating variations of both 3mm and 6mm lines and dots. This rigorous testing approach enabled the architects to confidently select a design that balanced their precise color specifications with maximum solar efficiency.

Facade Design Process

4. Final Outcome

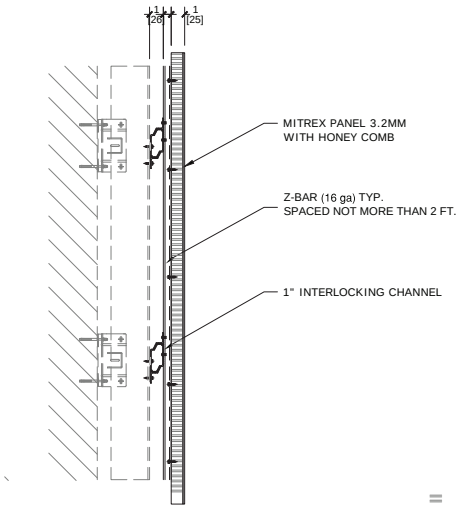
A 90.2 kW BIPV system was installed on the south-facing facade, complemented by non-solar ACM panels, ensuring cohesive aesthetics and maximum energy generation.





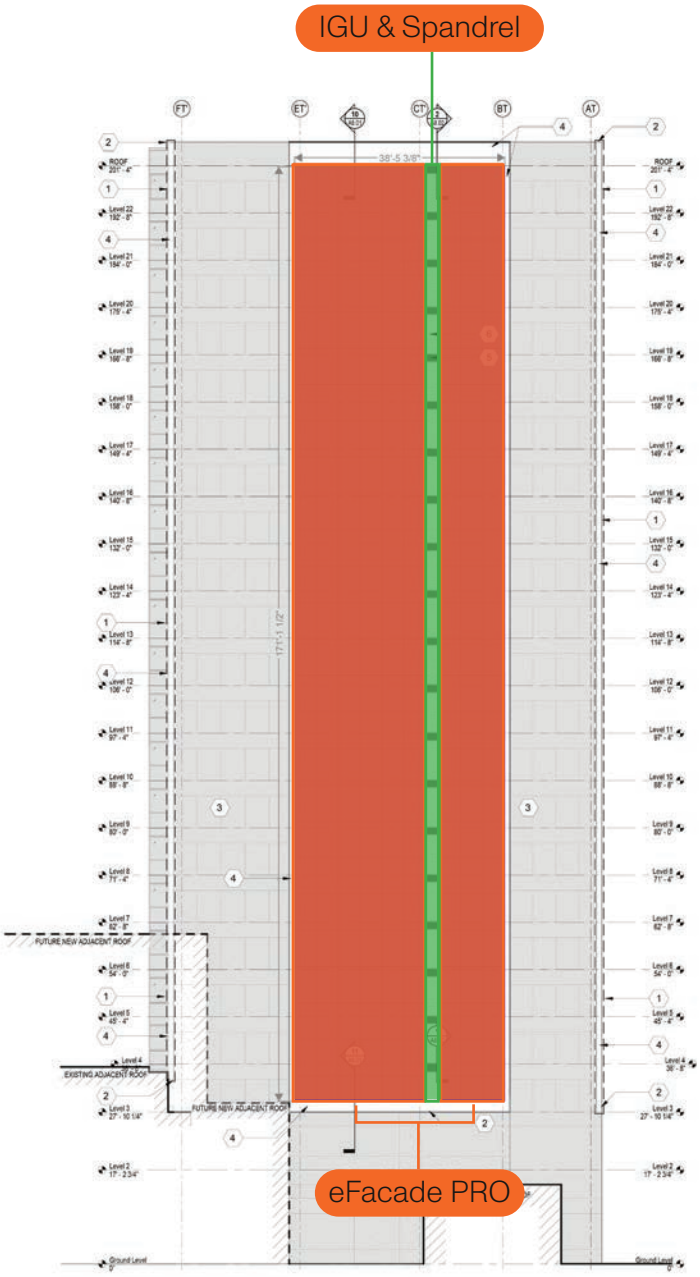
Architectural Details

The retrofit of the Loyola Residence involved replacing the aging south-facing facade with a modular cladding system that combined Mitrex BIPV panels and non-solar ACM panels. A semi-transparent curtainwall was integrated into the stairwell, highlighting the solar technology while allowing natural light into the building. The final result delivered a unified, energy-generating facade that met both performance and architectural goals.



Cladishield System Detail

Cladishield System



ROI & Cost Comparison

Energy Generation (Halifax, Nova Scotia, Canada)

Orientation	System Size (kW)	Energy Estimation (kWh)
South	90	73,300

ROI and Cost Comparison

Mitrex's BIPV solution eliminated additional land usage costs and combined the cost of traditional solar panels and cladding into a single integrated facade system:

- **Cost Parity:** Comparable upfront costs to traditional high-end cladding, removing financial barriers.
- **Energy Savings:** Annual generation of 73,300 kWh significantly reduces electricity costs.
- **Durability:** Low-maintenance materials with extended life cycle performance minimize ongoing upkeep costs.

Project Impact

- **Energy Efficiency:** 73,300 kWh/year—equivalent to powering approximately 13 apartments annually.
- **Sustainability Goals:** BIPV helps the university meet its carbon reduction goals with no loss of usable campus space.
- **Retrofit Innovation:** BIPV transformed a 50+ year-old facade with customized colors and patterns, demonstrating how high-efficiency solar tech can adapt to bold design ambitions.
- **Space Optimization:** Vertical surfaces become assets in a retrofit that preserves land while modernizing the campus visually and functionally.

Comparison: Project Energy Generation Per Location

A comparison of the Mitrex BIPV performance in different regions illustrates its versatility and value. In regions like Texas, California, and New York, differing sunlight levels and energy costs impact the system's effectiveness:

Orientation	System Size (kW)	Halifax, NS (kWh)	Los Angeles, CA (kWh)	New York, NY (kWh)	Miami, FL (kWh)	Chicago, IL (kWh)	Houston, TX (kWh)
South	90	73,300	86,592	79,917	71,619	79,466	70,897

- **Toll Free**

+1 (855) 254 0214

- **Learn More**

mitrex.com

info@mitrex.com

- **Headquarters**

41 Racine Rd, Toronto, ON M9W2Z4, Canada

+1 (416) 497 7120

- **USA Office**

Chrysler Building, 405 Lexington Avenue Floor 26, New York, USA, 10174

+1 (646) 583 4486

MITREX™

01/2026 - V2