



# Building a Greener Future: Sustainable Material Solutions Presentation



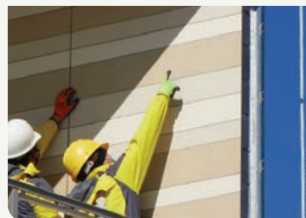
# Who We Are

## Natural Roots to Solar Innovation

Our mission is to be the catalyst that accelerates the adoption of sustainable, energy-generating, human-made structures.

## Our Background

- 25+ years in cladding construction, specializing in lightweight systems
- Manufacturing in Canada with 25,000 square feet daily output
- In-house team of skilled architects, designers, engineers, sales consultants, and project managers
- Fully code-compliant, fire-rated, and installation-ready architectural facade material



Stone Cladding



Lightweight Cladding



Multi-Facing & High-Performance Cladding



⚡ Solar Facade

# Major Milestones

**+25 Million** SQFT Installed

**+700** Projects Installed

**+1.6 Million** SQFT In The Pipeline



GCAT Group  
Founded

2003

2014

Cladify  
Founded



Mitrex  
Founded

2019

2024

MithraGPT (AI)  
Launching

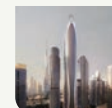
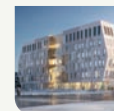


Guinness World Record -  
Largest BIPV Solar Mural  
The SunRise Building

2025

2026 - Q1

North America's Largest  
BIPV Building  
University Of Toronto



The World's Largest BIPV  
Building  
Binghatti Mercedes Benz Residences

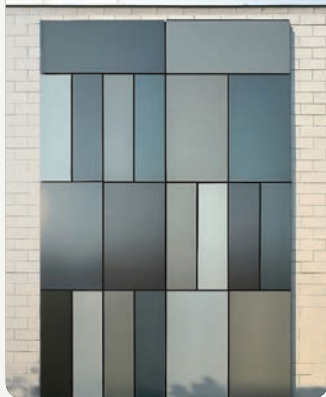
2026 - Q2

# Discover Energy-Generating Products

Mitrex

## eFacade LITE Cladding

BIPV in 5 colors and 2 sizes



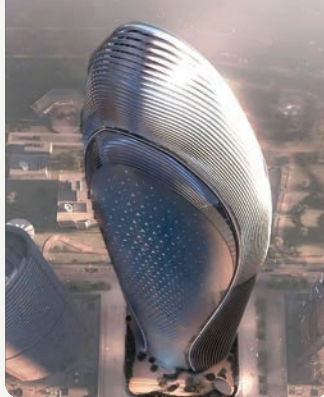
## eFacade PRO Cladding

BIPV in 48 colors with rainscreen installation



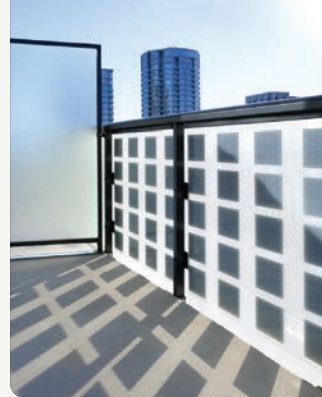
## eFacade PRO+ Cladding

Custom BIPV in any colour, size & system



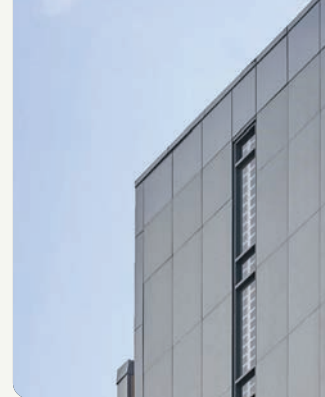
## Solar Railing

Balcony railing systems with integrated solar power



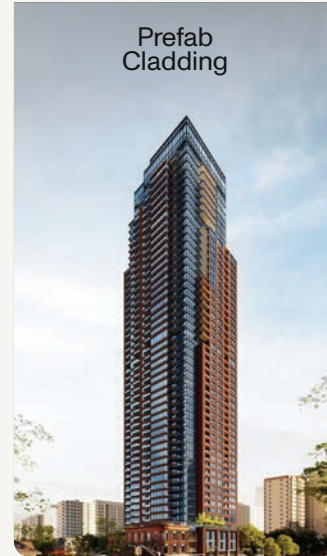
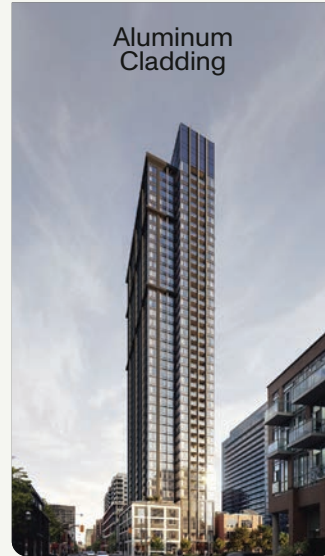
## Solar Glass

High-performance, energy-generating architectural glass



# Discover Sustainable Products

Cladify



# Our Approach

We have a holistic approach to ensure architectural, sustainability needs are met and challenges on site are addressed.

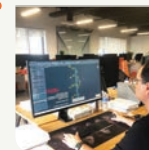
Our team provide guidance every step of the way from BIPV feasibility, optimization strategies, energy analyses, installation methods, etc etc.



Project  
Initiation



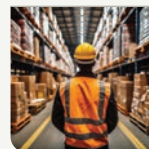
Design  
Assist



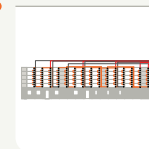
Project Proposal  
& Modeling



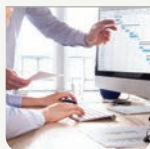
Manufacturing



Procurement  
& Scheduling



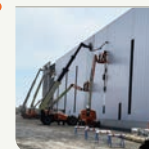
Project  
Design



Project  
Management



Installation  
Manual



Installation

# Why Mitrex?

Ideal for New & Retrofit Projects

High-Rise Residentials

Educational Buildings



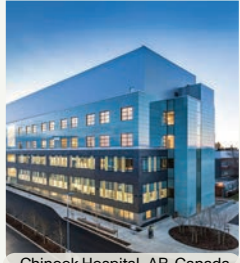
• The SunRise, AB, Canada



• University of Toronto, ON, Canada

Healthcare Facilities

Large Scale Infrastructure



• Chinook Hospital, AB, Canada



• Boston Intl. Airport, MA, USA

## • Architects

- Available in thousands of colors and textures.
- LEED and net-zero certifications.
- Retrofit projects with sustainability needs and façade upgrades.
- Building code compliant.
- Fire tested (ASTM E84, ASTM E136, NFPA 285, ASTM E119, S134, EN13501).

## • General Contractors & Builders

- Fast, simple installation.
- Traditional installation systems & electrical work (No tower crane required).
- Low scrap volume on site.
- Fire tested (ASTM E84, ASTM E136, NFPA 285, ASTM E119, S134, EN13501).
- Single trade onsite / very little storage space.

## • Building Owners

- Accessing green financing and funding opportunities.
- ESG or carbon neutrality goals.
- Green building or renewable energy mandates.
- Low maintenance and a lifetime warranty.
- Sustainability targets while generating a ROI.

Solar Energy Generation



# Does BIPV Work?

1. What does BIPV look like?
2. Isn't solar ugly?





Custom Shape & Sizes

Flat Modules



Curved Modules

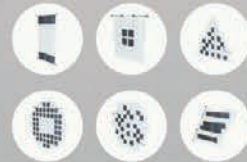


Non-Solar Facade Facings



Stone, Porcelain, Aluminum, Pre-Fab

⚡ Solar Cell Layout Options



⚡ Solar Facade Facings



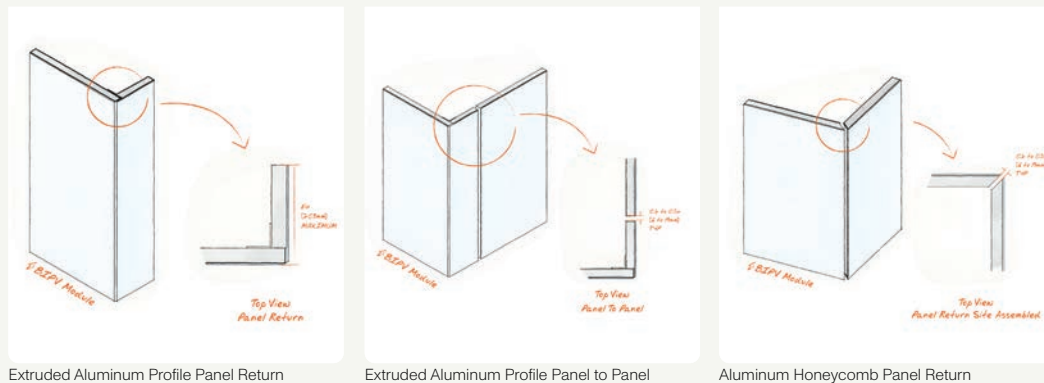
⚡ Solar Glass Finishes



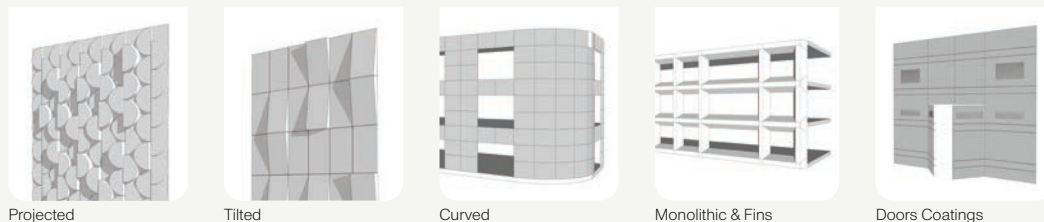
# Designing With Sustainable Materials

Mitrex products allow for complete freedom in dimensions, shapes, and finishes, and can support unique project requirements, whether you're building with complex geometries, matching specific color palettes, or need systems for one-of-a-kind projects.

## Details & Returns



## Assembly Shapes



# Solar Facade Product Options



	• eFacade LITE	• eFacade PRO	• eFacade PRO+
Colors & Patterns	5 color options	48 color options	Unlimited customizable colors & patterns
Sizes	2 size options	Custom sizes up to 80 × 39 in (2034 × 994mm).	Customizable single piece sizes up to 125 × 80 in (3175 × 2032mm). Preassembled pieces up to 420 inches (10.7) long.
	Shapes: rectangle	Shapes: rectangle	Customizable Shapes: rectangle, triangle, circle, and more
Systems	Ventilated rainscreen system, eFacade LITE system	Ventilated rainscreen system (interlocking channel or anchor plate)	Customizable rainscreen, unitized or prefabricated system options
Testing	3rd party tested, Code-compliant & safety tested, Fire tested	3rd party tested, Code-compliant & safety tested, Fire tested	3rd party tested, Code-compliant & safety tested, Fire tested

For product details about SolaRail™ and Solar Glass, feel free to contact us.

# Sustainable Product Options



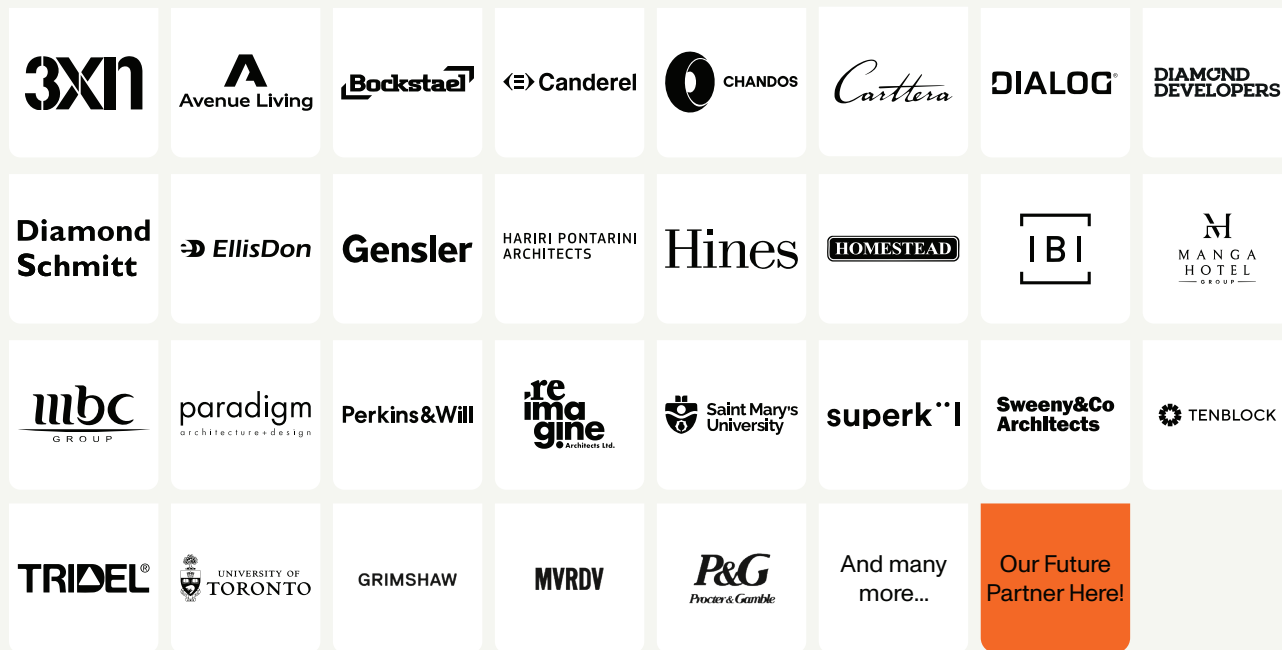
	• Cladify LITE	• Cladify PRO	• Cladify PRO+
<b>Materials</b>	5 stone options 5 porcelain options	20 stone options 20 porcelain options	Stone, porcelain or metal panel options
<b>Sizes</b>	Facing Finish: Polished and Honed	Facing Finish: Polished and Honed	Facing Finish: Polished, Brushed, Honed, Grooved
	2 size options: 73 × 36 in (1854 × 922 mm) 73 × 18 in (1854 × 456 mm)	Custom sizes up to 80 × 39 in (2034 × 994mm).	Customizable sizes up to: Stone: 120 × 60 in (3048 × 1524 mm) Porcelain: 120 × 60 in (3048 × 1524 mm) Metal: 300 × 96 in (7620 × 2438 mm)
	Backing: Extruded aluminum profile with panel thickness of 1.3in (34mm)	Backing: Extruded aluminum profile with panel thickness of 1.3in (34mm)	Backing: Extruded aluminum profile with panel thickness of 1.3in (34mm). Aluminum honeycomb with 1 or 2 in (25 or 50mm) thickness excluding facing.
<b>Systems</b>	Ventilated rainscreen system	Ventilated rainscreen system	Customizable rainscreen, unitized or prefabricated system options
<b>Testing</b>	3rd party tested, Code-compliant & safety tested, Fire tested	3rd party tested, Code-compliant & safety tested, Fire tested	3rd party tested, Code-compliant & safety tested, Fire tested



## Does BIPV Work?

1. Who has implemented BIPV before?
2. What projects are suitable for BIPV?

# Our Global Industry Partners



# University of Toronto, Myron & Berna Garron Health Sciences Complex

Mitrex

The University of Toronto Scarborough selected Mitrex to meet its ambitious goal of generating at least 20% of building energy from renewables, integrating a 632 kW BIPV system into the façade to replace conventional cladding. Mitrex's design-assist process enabled architectural freedom through multi-colored panels while ensuring energy performance and cost-effectiveness.

PRODUCT USED:  
eFacade PRO+



ARCHITECT:  
**Diamond Schmitt Architects/  
MVRDV**  
DEVELOPER:  
**University of Toronto**  
BUILDING TYPE:  
**University, Medical**  
PROJECT SIZE:  
**63,000 SQFT**  
SYSTEM SIZE:  
**632kW**  
ANNUAL POWER OUTCOME:  
**420,000kWh**  
COMPLETION DATE:  
**2026**

ROI:  
**Immediate**

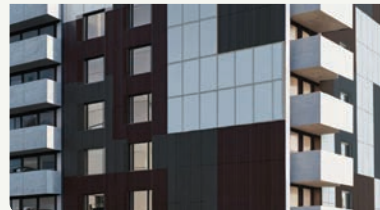


# Victoria Park Community Homes

Mitrex

The Victoria Park Community Homes retrofit in Hamilton, Ontario, demonstrates how solar technology can seamlessly blend with modern design in residential settings. Spanning 11,000 square feet, the façade features Mitrex solar cladding in Nobel Grey, Blackout, and Cassia finishes—creating a dynamic, energy-producing exterior. Designed by Invizij Architects and developed by Victoria Park Community Homes, the building now generates 110kW of clean electricity, contributing to energy efficiency while enhancing the visual appeal of the community housing project.

PRODUCT USED:  
eFacade LITE



ARCHITECT:  
**Invizij Architects**  
OWNER/DEVELOPER:  
**Victoria Park Community Homes**  
BUILDING TYPE:  
**Residential, Retrofit**  
PROJECT SIZE:  
**11,000 SQFT**  
SYSTEM SIZE:  
**110kW**  
ANNUAL POWER OUTCOME:  
**71,000kWh**  
COMPLETION DATE:  
**2026**

ROI:  
**Immediate**





# The SunRise Retrofit

Mitrex

Avenue Living chose Mitrex's BIPV façade to exceed a 50% carbon emissions reduction target required for retrofit financing, replacing traditional fiber cement siding with a 267 kW solar cladding system. The design also incorporated a culturally significant mural, creating the world's largest BIPV art installation while delivering long-term energy savings and ROI in under five years.

PRODUCT USED:  
eFacade PRO and PRO+



ARCHITECT:  
**MBC Group**  
OWNER/DEVELOPER:  
**Avenue Living/Logyx Solutions**  
BUILDING TYPE:  
**Residential Retrofit**  
PROJECT SIZE:  
**30,534 SQFT**  
SYSTEM SIZE:  
**267kW**  
ANNUAL POWER OUTCOME:  
**180,000kWh**  
COMPLETION DATE:  
**2025**

ROI:  
**4 Years**



# Aquabella

Cladify

Tridel and Hines collaborated with Cladify (a Mitrex company) during schematic design to replace over 8,500 individual porcelain slats with 944 pre-assembled panels. This shift streamlined installation, reduced costs by \$4–5 million, and met architectural demands for non-reflective textures to minimize lake glare.



ARCHITECT:  
**3XN, Kirkor Architects and  
Planners**  
DEVELOPER:  
**Tridel, Hines**  
BUILDING TYPE:  
**Residential /Retail Building**  
PROJECT SIZE:  
**160,000 SQFT**  
COMPLETION DATE:  
**2022**

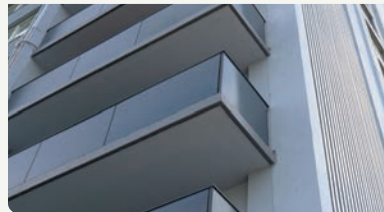
PRODUCT USED:  
Cladify PRO+



# 1154 Wilson Ave. Balcony Retrofit

Mitrex

Ten Block adopted Mitrex SolaRail™ balcony panels to replace aging infrastructure and generate on-site energy, achieving a 142 kW system that powers the equivalent of 16 residential units. The system offered a strong ROI, minimal tenant disruption, and a modernized aesthetic that aligned with sustainability goals.



DEVELOPER:  
**Tenblock Development**  
OWNER:  
**DIS Wilson**  
BUILDING TYPE:  
**Residential Building**  
PROJECT SIZE:  
**4,000 LFT**  
SYSTEM SIZE:  
**162 kW**  
ANNUAL POWER OUTCOME:  
**89,300kWh**  
COMPLETION DATE:  
**2024**

ROI:  
**Immediate**

PRODUCT USED:  
**SolaRail!**

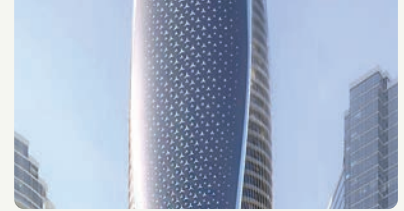
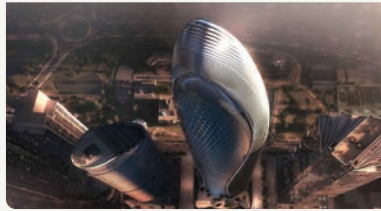


# Binghatti Mercedes-Benz Residences

Mitrex

Binghatti Developers selected Mitrex to design a custom BIPV façade that integrates Mercedes-Benz branding with LED-lit solar panels, achieving both fire-rated compliance and visual impact. Mitrex provided full design support, testing, and engineering to deliver a seamless blend of performance and luxury identity.

PRODUCT USED:  
eFacade PRO+



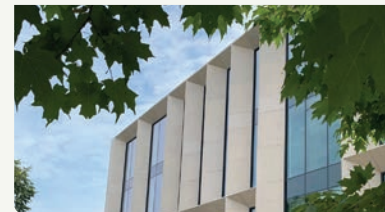
ARCHITECT:  
**Silverstone**  
OWNER/DEVELOPER:  
**Binghatti Developers,  
Mercedes-Benz**  
BUILDING TYPE:  
**High-End Residential**  
PROJECT SIZE:  
**7,475 sqft**  
SYSTEM SIZE:  
**619kW**  
ANNUAL POWER OUTCOME:  
**597MWh**  
COMPLETION DATE:  
**2026**



# Western University Entrepreneurship & Innovation Centre

Cladify

Western University partnered with Cladify to replace heavy stone cladding with lightweight, pre-assembled panels to reduce structural load, improve thermal performance, and meet energy efficiency goals. The system enabled rapid installation, eliminated complex framing, and saved \$3–4 million in wall assembly costs.



ARCHITECT:  
**Perkins & Will**  
DEVELOPER:  
**Hayman Construction**  
BUILDING TYPE:  
**Educational Building**  
PROJECT SIZE:  
**44,000 SQFT**  
COMPLETION DATE:  
**2024**



PRODUCT USED:  
Cladify PRO+

# Installation Systems

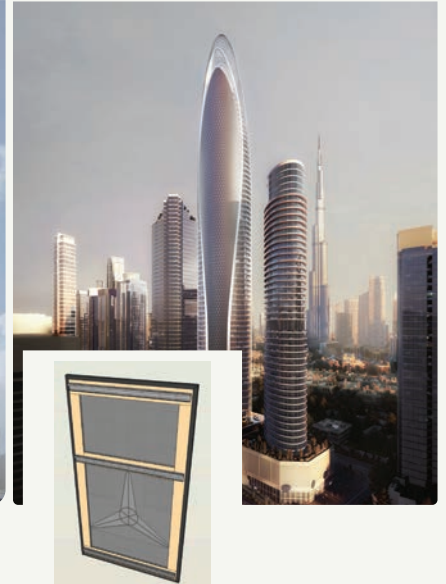
We understand that your vision is unique; our solutions match it. From rainscreen to unitized wall systems, our versatile systems can accommodate any project with any facing material.



**Cladishield System**  
Rainscreen



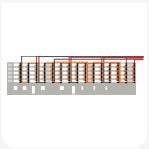
**Cladifab System**  
Prefab Wall



**Customizable Integrations**

# Electrical Installation

- Engineered and installed like typical solar system.
- Does not require specialty equipment.
- Monitoring software for tracking and performance management.

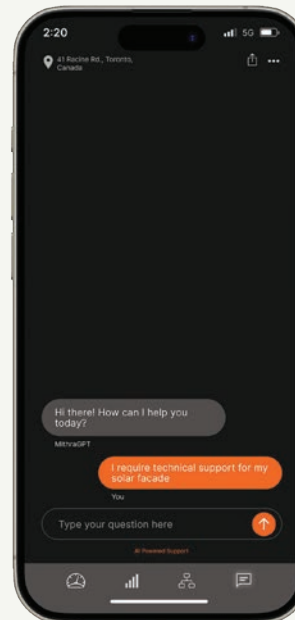
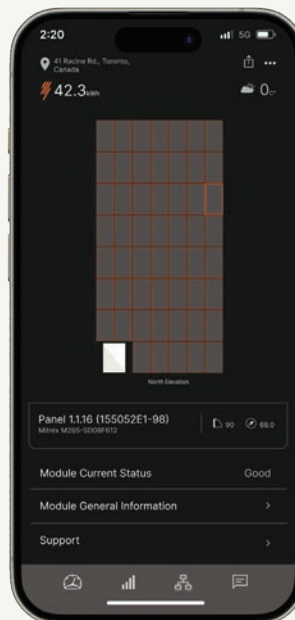
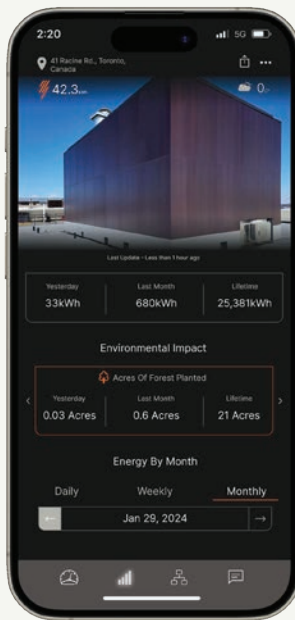


DESIGN SERVICE:  
Electrical Design Support



# Monitoring System

The Mitrex Monitoring systems pairs with your energy-generating solar facade to give you real-time monitoring, and energy insights.





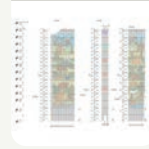
# Design Assist Services

Through our Design Assist process, we provide system modeling, engineering validation, energy simulations, and prefabrication strategies—streamlining construction and reducing life cycle costs. Our BIPV and prefabricated façade solutions ensure code compliance, sustainability, and design integrity.



## Initial Consultation

© TECHNICAL DELIVERABLES:  
Site analysis summary, design brief



## Solution Exploration

© TECHNICAL DELIVERABLES:  
System recommendation matrix, solar energy potential analysis



## Collaborative Design Development

© TECHNICAL DELIVERABLES:  
CAD/Revit details, connection drawings, integrated facade layouts



## Engineering & Energy Analysis

© TECHNICAL DELIVERABLES:  
Structural calculations, energy modeling reports, code compliance checklists



## Prototyping & Testing

© TECHNICAL DELIVERABLES:  
Performance test reports, QA reviews



## Prefabrication & Logistics Planning

© TECHNICAL DELIVERABLES:  
Factory QC documentation, logistics plan, panel maps

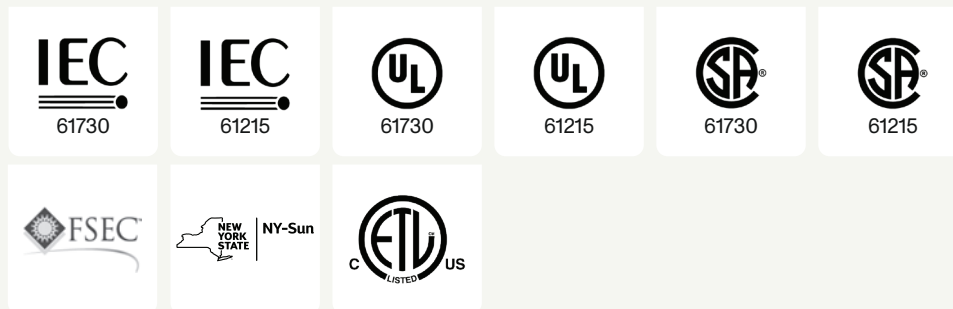


## Implementation Support

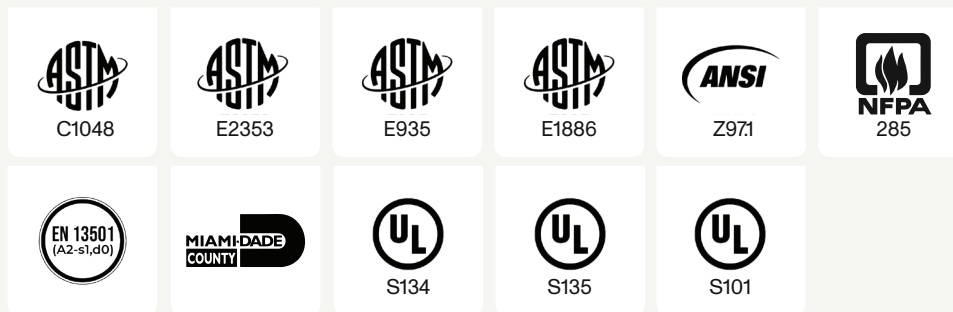
© TECHNICAL DELIVERABLES:  
Site installation guide, QA checklist, commissioning certificate

# Testing and Certifications

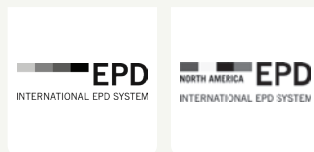
## PV Testing



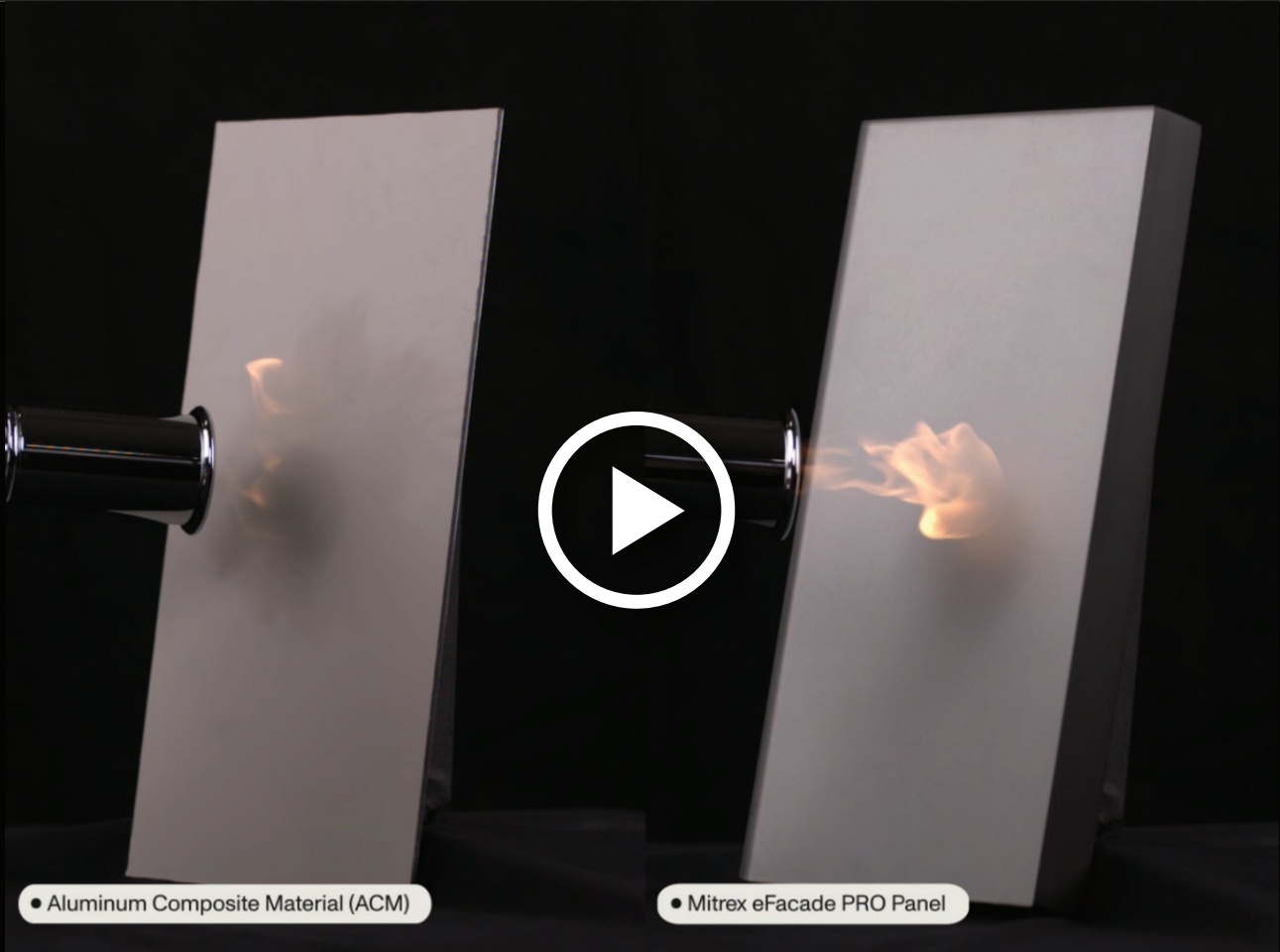
## Building Material Testing



## Environmental Product Declaration



Mitrex BIPV: 40.79 kg CO<sub>2</sub>e/m<sup>2</sup>  
Cladify Porcelain: 25.70 kg CO<sub>2</sub>e/m<sup>2</sup>  
Cladify Stone: 30.58 kg CO<sub>2</sub>e/m<sup>2</sup>  
Cladify Metal Panel: 21.65 kg CO<sub>2</sub>e/m<sup>2</sup>



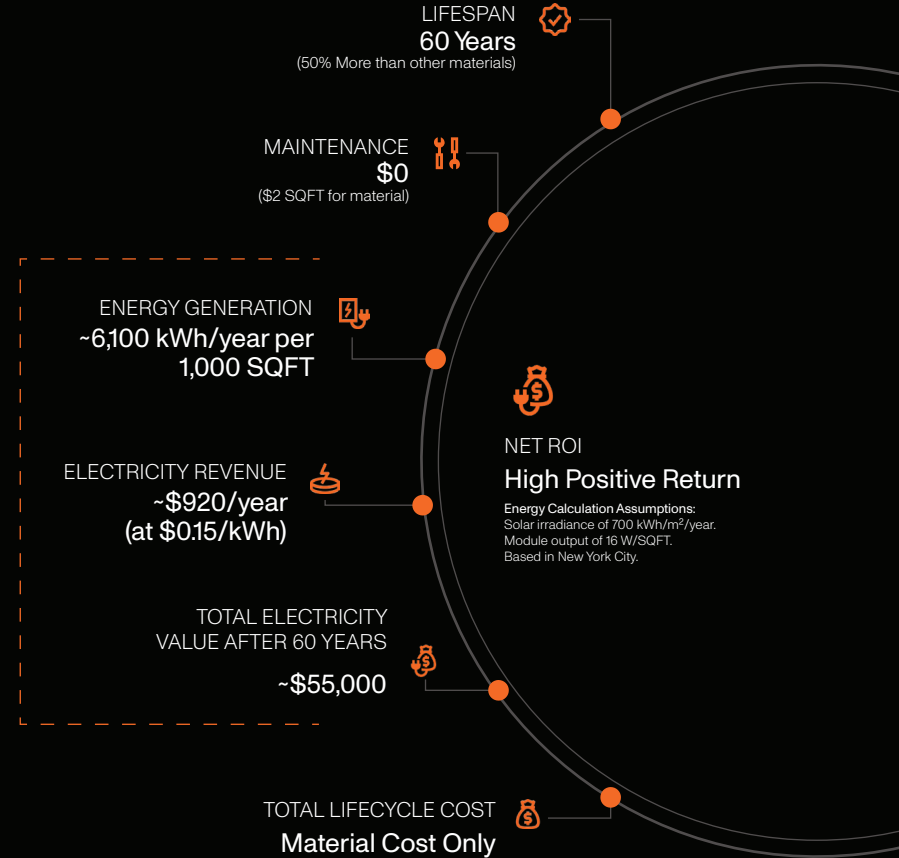
• Aluminum Composite Material (ACM)

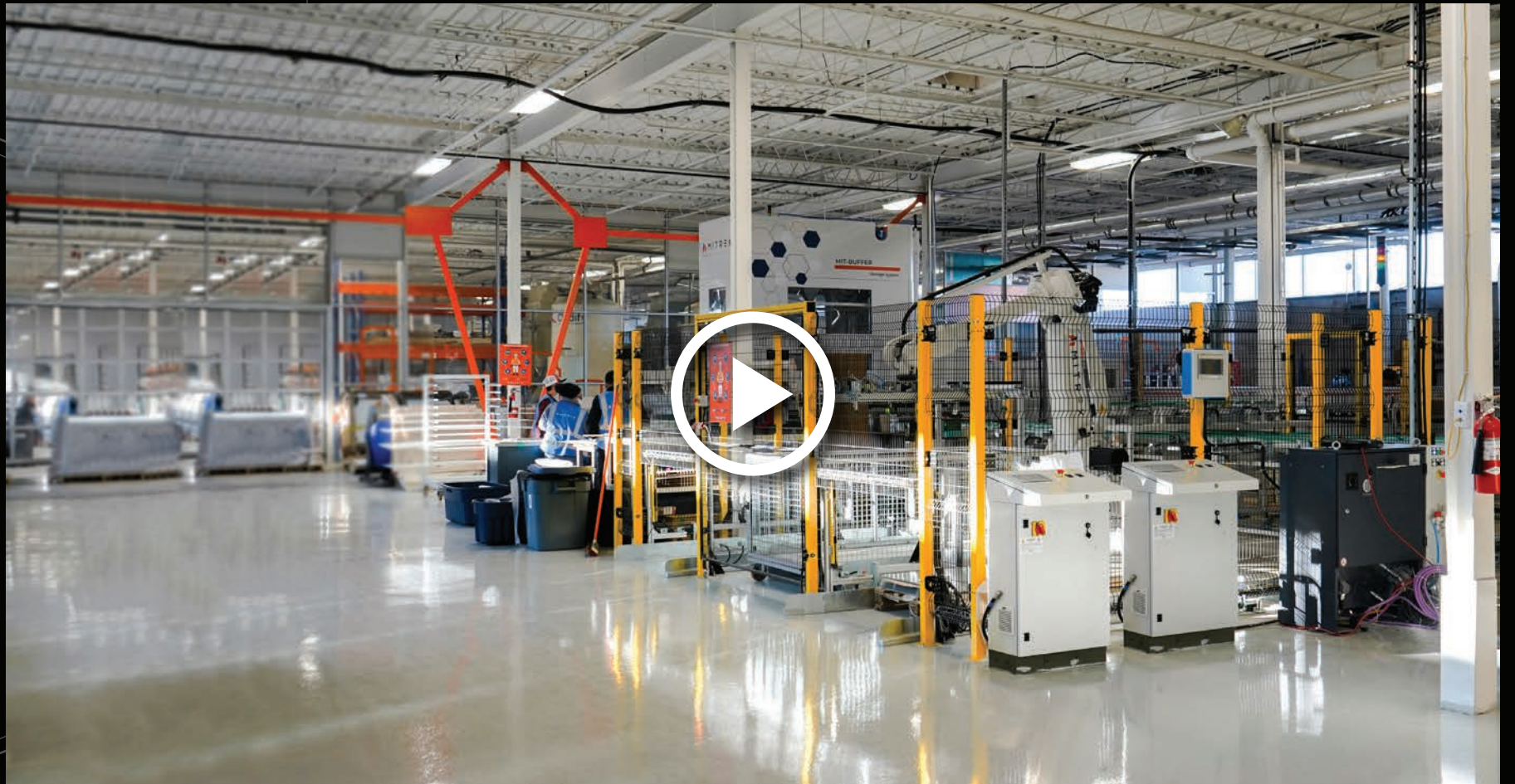
• Mitrex eFacade PRO Panel

# ROI & Payback Benefits

Mitrex turns your façade into a long-term asset, one that not only enhances your building but actively pays you back through clean, on-site energy production.

- The Mitrex facade pays for itself immediately or up to year 5 through electricity revenue from clean energy generation.
- Conventional material such as ACM or GFRC continue to cost you in maintenance, cleaning and replacement (typically after 30 years).
- Mitrex facade is maintenance free and has a lifespan of 60 years.





# Thank You!

Thank you for your attention.

Let's work together to shape our cities into models of sustainability and resilience. The journey towards a greener and brighter future begins with each one of us taking proactive steps to embrace innovative solutions like BIPV and drive sustainable development. Together, we can make a difference.

• Toll Free

+1 (855) 254 0214

• Learn More

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+1 (416) 497 7120

• USA Office

Chrysler Building, 405 Lexington Avenue Floor 26, New York  
+1 (646) 583 4486

# Testing Summary

● Category	● Test Name	● Test Specification	● Result
Acoustic	Sound Transmission Loss	ASTM E90	Sound Transmission Rating: CladiShield Rainscreen: 34; Claditized Unitized: 35; CladiFab Prefab: 55
	Salt Spray Resistance	ASTM B117-16	No deleterious effects.
Environmental	Laboratory Aging of Sandwich Construction	ASTM C481-99 (Reapproved 2016)	ASTM C273; C297; C364; C393 tests were reconducted after aging: the variation was +1.36 %, -5.90%; +2.55%; -7.95%. Note: Positive variation indicates no decrease in strength after aging.
	Resistance to Rapid Freezing and Thawing	ASTM C666/C666M-15	No visible change to panel
	Air Leakage Resistance	ASTM E283-04 (2012)	Q <sub>inf</sub> = 0.031 cfm/ft <sup>2</sup> or 0.155 L/s-m <sup>2</sup> at 300 Pa; Q <sub>exf</sub> = 0.024 cfm/ft <sup>2</sup> or 0.122 L/s-m <sup>2</sup> at 300 Pa
	Fluorescent UV Exposure	ASTM G154 -16	No visible change
	Water Penetration Resistance	ASTM E331	No water infiltration at 15 psf or 720 Pa
Fire Safety	Fire Endurance Test	ASTM E119 / CAN/ULC S101	Passed
	Exterior Wall Assembly Fire Test	CAN/ULC S134	Passed
	Fire Classification	EN13501	Rating: A2-s1,d0
	Tunnel Test	ASTM E84	FSI = 10; SDI = 200; Class A
	Non-Combustibility (ASTM E136)	ASTM E136	Passed
	Multi-Story Fire Test	NFPA 285	Passed
	Surface Burning Characteristics	CAN/ULC S102	FSR = 0; Class A
	Non-Combustibility (CAN/ULC S114)	CAN/ULC S114	Passed
	Combustibility Parameters (Cone Calorimeter)	CAN/ULC S135	Passed NBCC 2015 requirements
Impact / Safety	Large Missile Impact Test	ASTM E1996 / TAS 201	Passed
	Cyclic Pressure Loading	ASTM E1886 / TAS 203	Passed. Over 3,500 positive and negative pressure cycles were applied at ± 2880 Pa (60 psf), equivalent wind load of 165 mph.

# Testing Summary

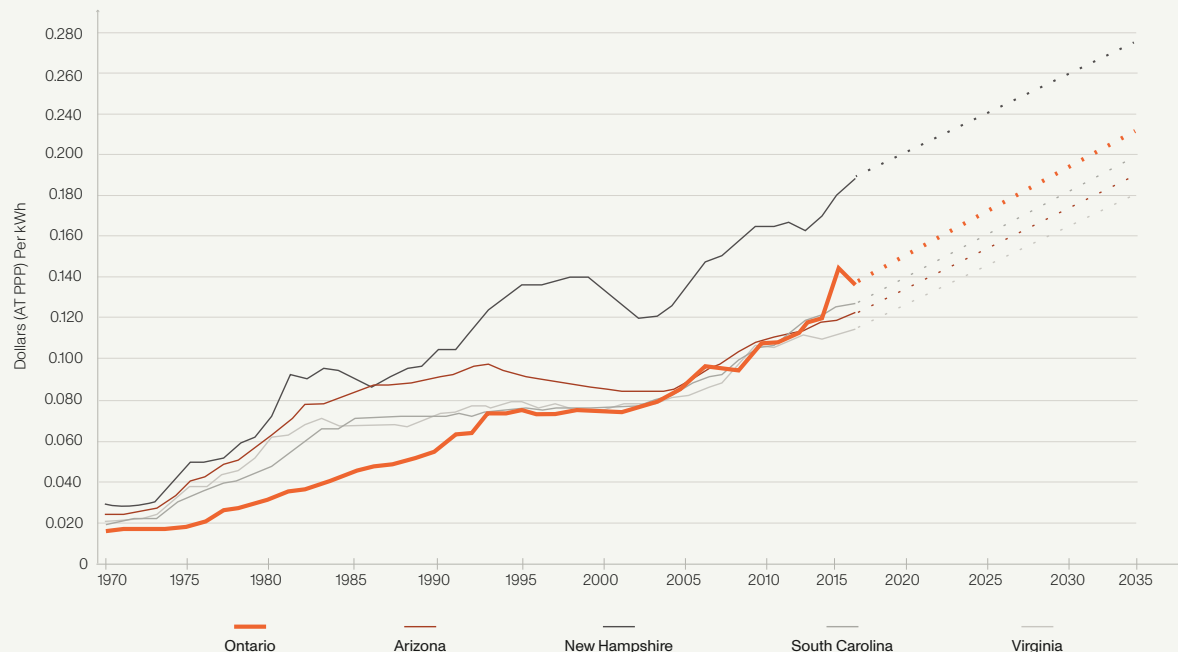
● Category	● Test Name	● Test Specification	● Result
Mechanical	Shear Strength and Shear Modulus	ASTM C273/C273M-18	Ultimate core shear strength = 1.01 MPa (147 psi); Core shear modulus = 10.9 MPa (1583 psi)
	Shear Strength by Beam Flexure	ASTM C393/C393M-16	Max core shear strength = 0.94 MPa (137 psi); Facing bending stress = 8.14 MPa (1180 psi)
	Flexure Creep Evaluation	ASTM C480/C480M-16	Net creep (in/day) facing - 0.029
	Density of Sandwich Core	ASTM C271/C271M-16	327 kg/m <sup>3</sup> (20.42 lbm/ft <sup>3</sup> )
	Flatwise Tensile Bond Strength	ASTM C297/C297M-16	1.52 MPa (220 psi)
	Edgewise Compressive Strength	ASTM C364/C364M-16	37.85 MPa (5490 psi)
	Flatwise Compressive Strength	ASTM C365	1.92 MPa (278 psi)
	Flexural Strength	ASTM C880/C880M-15	22.83 MPa (3311.21 psi); No failure
	Tensile Properties of Adhesive Bond	ASTM C897-08 (2016)	Adhesive bond did not fail
Structural	Damage Resistance	ASTM D7766/D7766M-16	No panel deformation
	Structural Performance	ASTM E330	+/- 80 psf or +/- 3840 Pa; no failure
Thermal	Thermal Resistance	ASTM 1363-11	0.20 m <sup>2</sup> ·°C/W (1.12 hr·ft <sup>2</sup> ·°F/BTU)
	Linear Thermal Expansion	ISO 10545-8	11.28 × 10 <sup>-6</sup> /°C
PV Quality	Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval	IEC/UL 61215	Passed
PV Safety	Standard for Photovoltaic (PV) Module Safety	IEC/UL 61730	Passed



# Electricity Cost Over The Years

On average electricity rates per kWh increase 1.4% - 1.7% per year in North America and almost doubles per decade.

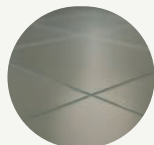
Statistics Canada: Electric Power Statistics, Volume 2 (1970-1996); Electric Power Generation, Transmission and Distributions (1997-2004); Annual Electricity Supply and Disposition Survey (2005-2015), Energy Information Administration: State Energy Data System (SEDS).



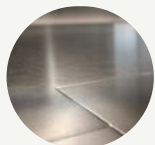
Electric Utility Revenue per kWh for Residential Customers for Ontario and Selected States

## Facing Finishes

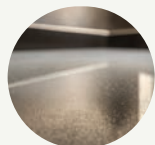
Elevate your architectural designs with Mitrex's diverse range of textured solar facades. Our panels are not just energy-efficient solutions; they are masterpieces of texture, offering a tactile dimension to your building's exterior. From the smooth, polished finesse of high-gloss finishes to the rustic, earthy feel of stone-like textures, our array of options caters to every design ethos.



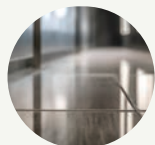
Super Satin Glass



Satin Glass



Matte-Matte Glass



Glossy Glass



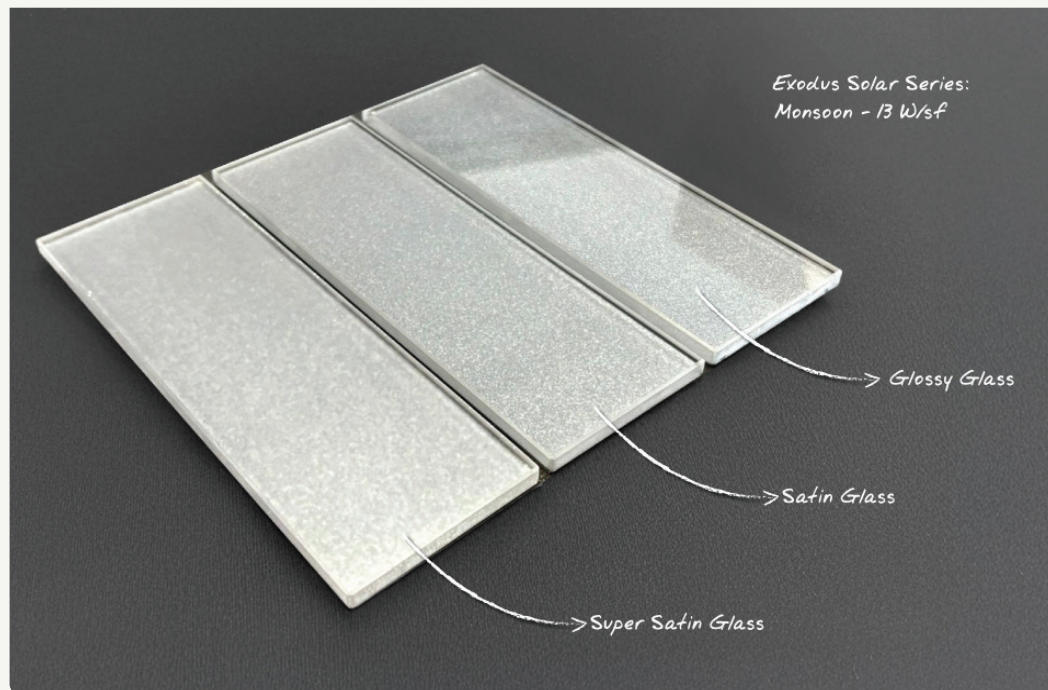
Wood Texture Glass



Small Wood Texture Glass



Granite Glass



*Exodus Solar Series:  
Monsoon - 13 W/s<sup>2</sup>*

*> Glossy Glass*

*> Satin Glass*

*> Super Satin Glass*

# Conclusion

Overall, Mitrex is able to offer a high-performance façade that contributes to the project's sustainability goals (minimum of 40 LEED points), and offer the client a premium aesthetic design for their new building.

Many Ev's and common elements will run using the electricity that is being generated by Mitrex Panels with a minimum investment in solar integrated solution.

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