



Retrofits

Building-Integrated Photovoltaics (BIPV) Brochure



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Why Use BIPVs for Retrofits?

Aging façades limit building performance, increase operating costs, and make it difficult to meet modern energy, sustainability, and aesthetic standards. Mitrex retrofit solutions with building-integrated photovoltaics (BIPV) provide a fast, lightweight, and non-intrusive solution for upgrading outdated exteriors. Mitrex BIPV transforms outdated buildings into renewable-energy-producing, maintenance-free, and visually modern assets without major structural modifications. At only 5 lb/SF and installed using a fast clip-mounted system, Mitrex enables a seamless transition from a passive exterior to an active, power-generating building envelope.



Ultra-Lightweight & Simple Installation

Mitrex BIPV uses an ultra-lightweight 5 lb/SF panel mounted with a non-penetrative, standard clip system, allowing for easy installation.



Lifecycle Cost, ROI & Energy Value

Mitrex BIPV transforms the façade into a long-term renewable energy asset, reducing operating costs and improving lifecycle value.



Green & Retrofit Financing Advantages

Because the façade generates renewable energy and reduces embodied carbon, owners can access financing programs tied to ESG performance and deep-retrofits.

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Low-Disruption Implementation & Operational Continuity

Mitrex BIPV is engineered for buildings that must remain fully operational during construction, and the system minimizes disturbance to tenants.



Fire, Safety & Product Certifications

Mitrex BIPV systems meet rigorous solar, fire, and structural standards, ensuring long-term safety, durability, and reliable performance.



Why Use BIPVs for Retrofits?

Ultra-Lightweight & Simple Installation

Retrofit projects require a façade solution that installs quickly, safely, and compatibly over existing structures. Mitrex's BIPV uses an ultra-lightweight 5 lb/SF panel mounted with a non-penetrative clip system, allowing solar cladding to be added without demolition, structural reinforcement, or interior disruption. This makes BIPV adoption feasible for aging buildings while maintaining installation timelines comparable to traditional materials.

- Ultra-lightweight 5 lb/SF BIPV panels suitable for older or capacity-limited structures
- Non-penetrative clip system eliminates the need for invasive fasteners
- Installs directly over existing façades with minimal prep work
- Same installation speed as traditional cladding systems
- Supports seamless integration with existing envelope and mechanical systems

Lifecycle Cost, ROI & Energy Value

Mitrex BIPV transforms the façade into a long-term renewable energy asset, reducing operating costs, maintenance-free facades, and improving lifecycle value. Designed for durability, low maintenance, and easy selective replacement, the retrofit solution delivers predictable ROI through energy generation and reduced long-term building expenses.

- On-site solar generation lowers lifetime energy and operating costs
- Maintenance-free exterior surface reduces cleaning and access costs
- ROI modeling includes solar yield, initial investment & operational savings
- 60-year service life reduces the need for future cladding replacement
- Increases total building asset value and leasing appeal

Green & Retrofit Financing Advantages

Because Mitrex BIPV generates renewable energy and reduces embodied carbon, owners can access specialized financing programs tied to ESG performance and deep-retrofit upgrades. These advantages make large BIPV retrofit projects more financially accessible and attractive.

- Supports green financing, sustainability-linked loans, and retrofit incentives
- May qualify for lower interest rates, higher loan-to-value ratios, and longer payment terms
- Enhances compliance with ESG mandates and carbon-reduction strategies
- Reduces embodied carbon through lightweight, low-carbon materials
- Strengthens eligibility for government or institutional climate incentives





Low-Disruption Implementation & Operational Continuity

Mitrex BIPV is engineered for buildings that must remain fully operational during construction. With no structural reinforcement required and fast exterior installation, the system minimizes disturbance to tenants, customers, and revenue-generating spaces.

- Phase-by-phase installation minimizes operational impact
- No interior access or major demolition required
- Low noise, low vibration installation suitable for occupied buildings
- Minimal impact on tenant comfort, staff operations, or revenue
- Compatible with rapid schedules for commercial, residential, and institutional retrofits



Fire, Safety & Product Certifications

Safety, compliance, and performance are central to building design. Mitrex BIPV systems are tested and certified to meet or exceed international standards for solar performance, fire safety, wind resistance, and environmental durability. These certifications ensure that educational facilities can achieve long-term safety and risk mitigation while adopting advanced sustainable technologies.

- Must meet solar certifications including UL 61730, UL 61215.
- Systems must meet/exceed fire-rating standards (NFPA 285, EN 13501 A2-s1,d0 fire classification, CAN/ULC).
- Systems must tolerate high wind loads, temperature swings, humidity, and sea-air salt corrosion such as ASTM E1996 for impact resistance, and ASTM E330 for wind load performance.



Inspirational Projects



ARCHITECT:
MBC Group
DEVELOPER:
Avenue Living/Logyx Solutions

● The SunRise

● Project Challenge

- The planned 60 kW system couldn't meet the required 50% decarbonization target needed for retrofit funding.
- The original fiber-cement design and mural concept didn't provide enough solar area to meet energy needs.
- The retrofit required coordinated installation, electrical integration, cost control, and durable long-term performance.

● Mitrex Solution

- Mitrex designed a 267 kW BIPV façade, enabling Avenue Living to exceed decarbonization goals and secure financing, with strong long-term ROI and ~\$80,000/year projected energy savings.
- Mitrex integrated solar across all four elevations, combining performance with a large artistic façade—featuring an 85-ft Indigenous-designed mural and achieving the world's largest BIPV mural.
- Mitrex provided panels compatible with standard rainscreen systems, simplifying installation and significantly reducing long-term maintenance costs.



DEVELOPER:
Tenblock Development

● 1154 Wilson Ave. - Balcony Retrofit

● Project Challenge

- Switching from traditional railings to BIPV mid-project required updates to plans, budgets, and installation methods.
- The GC needed to justify the higher upfront cost of BIPV railings and prove long-term financial value to the building owner.
- The existing railings and façade were deteriorating, costly to maintain, and no longer meeting aesthetic or performance expectations.

● Mitrex Solution

- Mitrex provided clear guidance so the transition was seamless, with exterior-only installation that kept tenants undisturbed while delivering a modern solar railing system.
- Mitrex demonstrated strong ROI through reduced operating and maintenance costs, helping stakeholders confidently move from traditional railings to BIPV.
- Mitrex's BIPV railings replaced failing components with a durable, energy-generating 142 kW system that lowers energy costs and transforms unused elements into a renewable asset.

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- Learn More

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Mitrex and Cladify Projects

