



Healthcare & Hospitals

Building-Integrated Photovoltaics
(BIPV) Brochure



Why Use BIPVs in Healthcare Facilities?

Healthcare facilities demand the highest standards of safety, reliability, and resilience. From structural integrity and aesthetics to sustainability, thermal efficiency, building acoustics, and security, façade design plays a key role in healthcare buildings. With Mitrex's Building-Integrated Photovoltaic (BIPV) systems, the building envelope becomes an energy-generating asset—transforming facades, glazing, cladding, and curtainwall systems into sources of clean power, all while delivering premium architectural finishes.



Energy-Generating Facade

BIPVs on site energy generation helps facilities meet an increasing demand for sustainable design with EPD certifications that align with LEED or ESG frameworks.



Sustainability, Lifecycle Cost & Value Retention

Design for 60+ years of performance, with built in asset value retention through energy generation payback and reduced operational costs.



Maintenance-Free & Service Life

Durable, maintenance-free, self-cleaning facade systems backed by a lifetime warranty, optional service contracts, and minimal replacement.



Project Implementation, Operations & Retrofit Compatibility

Suitable for new builds and retrofits with no interruption to operations, minimal on site disturbance, and quick installation, minimizing impact on patient care.



Energy Resiliency

Source of backup power supplied through the building facade, enabling energy-independent facilities during grid disturbances.



Fire, Safety & Product Certifications

BIPV facades meet rigorous testing standards including fire, impact, wind, acoustic, and solar certifications.



Why Use BIPVs in Healthcare Facilities?



Energy-Generating Facade

Healthcare facilities have an increasing need for sustainable building design. Integrated energy-generating facades improve building envelope performance and support these facilities in achieving sustainable, reliable, and cost-efficient buildings.

- BIPVs generate on-site renewable energy from façade-integrated solar systems.
- Facade materials have low embodied carbon, supported by full Life Cycle Assessments and Environmental Product Declarations (EPDs).
- Supports LEED, BREEAM and institutional ESG frameworks.



Sustainability, Lifecycle Cost & Value Retention

Generally, healthcare facilities and hospitals expect their facilities to last for decades—so their architectural systems **must deliver value over the full asset lifecycle**. Asset value retention is built into the BIPV facade system through renewable energy payback, reduced operational costs over the building lifetime, and streamline implementation that reduce costs.

- Designed for 60+ years of performance, aligning with major medical facility lifecycle expectations.
- ROI modelling available that factors initial investment, solar energy yield, energy cost savings, and operational costs over lifetime.
- Architectural-grade finishes retain institutional asset value and reduce risk of early cladding replacement.





Maintenance-Free & Service Life

Operations in healthcare demand façade systems engineered for durability, minimal maintenance disruption, and long service life. **Mitrex BIPVs reduce replacement and maintenance needs compared to traditional cladding systems** through an extended service life and a high-performing system.

- Mitrex BIPV systems are engineered for durability under rigorous conditions—chemical cleaning, frequent wash-down, humid environments and thermal cycling.
- Self-cleaning surface treatments reduce frequency of manual cleaning, lower labour cost, minimize access equipment and water usage.
- Modular panel design enables selective replacement of façade units with minimal disruption to active hospital wings or patient care zones.
- Lifetime product and energy performance warranty provide lifecycle assurance.
- Comprehensive life-cycle cost analysis includes initial cost, expected service life, scheduled maintenance, replacement modules, and operations budget.
- Optional monitoring and service-contract programmes enable proactive lifecycle management including scheduled inspections, monitoring, maintenance planning and performance tracking.



Project Implementation, Operations & Retrofit Compatibility

Whether for new builds, expansions or retrofits, healthcare campuses require façade solutions that integrate without major disruption to operations. **Mitrex BIPV facades minimally contribute to operational disruption during installation**, which is critical for healthcare facilities that have demanding timelines for new or retrofit projects.

- Mitrex BIPV systems integrate seamlessly into new hospitals, expansions or retrofit replacements of existing cladding.
- Designed for low-disruption installation—critical in live hospital environments—with phased work, prefabricated panels, quick installation, off-hours, and minimal noise/vibration.
- Compatible with curtain wall systems, rainscreens, canopies, skylights and modular expansions.





Energy Resiliency

Critical healthcare operations demand buildings that support energy-resilient design, micro-grids and backup power systems. **With BIPVs, backup power can be supplied on site through the building facade, enabling energy-independent facades** that keep patient care uninterrupted during grid disturbances.

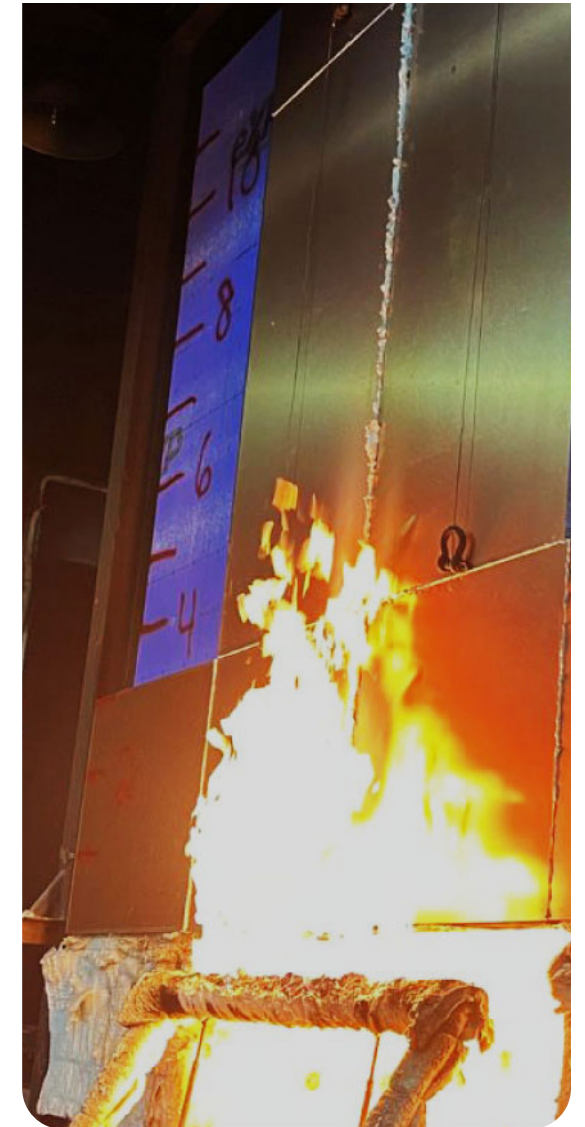
- Mitrex BIPV systems can feed into integrated micro-grid systems, compatible with battery-storage systems, emergency backup power and resilient facility operations.
- Supports hospital targets for net-zero energy, resilience and reduced dependence on external grids.
- Ideal for critical zones: ICUs, data-centres, sterilization wings, emergency departments.



Fire, Safety & Product Certifications

Safety in healthcare architecture is non-negotiable—facades must meet rigorous global standards and perform under extreme conditions. **Mitrex BIPVs are fully certified for healthcare-grade safety and durability in critical facility applications.**

- Solar Modules: UL 61730, UL 61215 (IEC equivalents)
- Fire Performance: NFPA 285, EN 13501 A2-s1,d0, CAN/ULC-S134
- Wind Load: ASTM E330
- Impact Resistance: ASTM E1996 Category D compliant
- Durability: Thermal cycling, humidity, salt-spray (ASTM G85) designed for coastal & extreme climates
- STC 34 according to ASTM E90



Inspirational Projects



ARCHITECT:
Reimagine Architects
DEVELOPER:
Alberta Health Services

Chinook Hospital Retrofit

Project Challenge

- Existing facade failed; traditional materials like GFRC didn't meet sustainability goals.
- BIPV had to stay cost-competitive while balancing upfront costs with long-term savings.
- Custom solar color developed to match design without compromising efficiency.
- Retrofit required tight coordination across trades to ensure durable, on-budget installation.

Mitrex Solution

- Custom BIPV panels replaced GFRC, combining energy generation with tailored aesthetics to meet sustainability goals.
- Comparable to traditional materials, the system offered long-term savings and an excellent ROI through solar production.
- Custom colors matched the hospital's facade, creating a unified, visually striking appearance.
- Collaboration with architects and contractors ensured smooth installation with minimal disruption.



ARCHITECT:
Diamond Schmitt Architects/MVRDV
DEVELOPER:
University of Toronto

SAMIH Scarborough Academy of Medicine and Integrated Health

Project Challenge

- The University of Toronto Scarborough required high renewable energy targets, prompting a shift from standard rooftop solar to integrated BIPV solutions.
- Reducing rooftop solar increased reliance on the vertical façade, demanding precise panel orientation and material selection for maximum output.
- The design evolved into a detailed mosaic of multiple panel sizes and colors, balancing aesthetics and energy performance.
- Integration of BIPV within union labor standards and a rainscreen system required coordination to ensure quality, efficiency, and compliance.

Mitrex Solution

- Full BIPV integration replaced metal cladding, delivering 632 kW of solar capacity and meeting the 20% renewable energy target.
- Mitrex worked with MVRDV and Diamond Schmitt Architects to refine the facade's complex mosaic layout, ensuring cost-effective and efficient implementation.
- Customized darker shades improved solar output while maintaining the architect's aesthetic vision.
- Partnering with EllisDon, Mitrex ensured structural integrity, durability, and compliance with union standards through a high-quality rainscreen system.

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- Learn More

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Mitrex and Cladify Projects

