
SYSTEM
BIPV
BUILDING INTEGRATED PHOTOVOLTAIC PRODUCT
ARCHITECTURAL BIPV SOLUTIONS
CATALOG
PROJECT
2025

For many years, ML System has been developing custom design solutions that meet the expectations of architects. The projects presented in this catalog demonstrate how photovoltaic façades, balustrades, and sunshades can be fully integrated into a building, often creating a unique technical and ecological character.

Sylwester Korzeniak, Director of Development and Technical Support Department

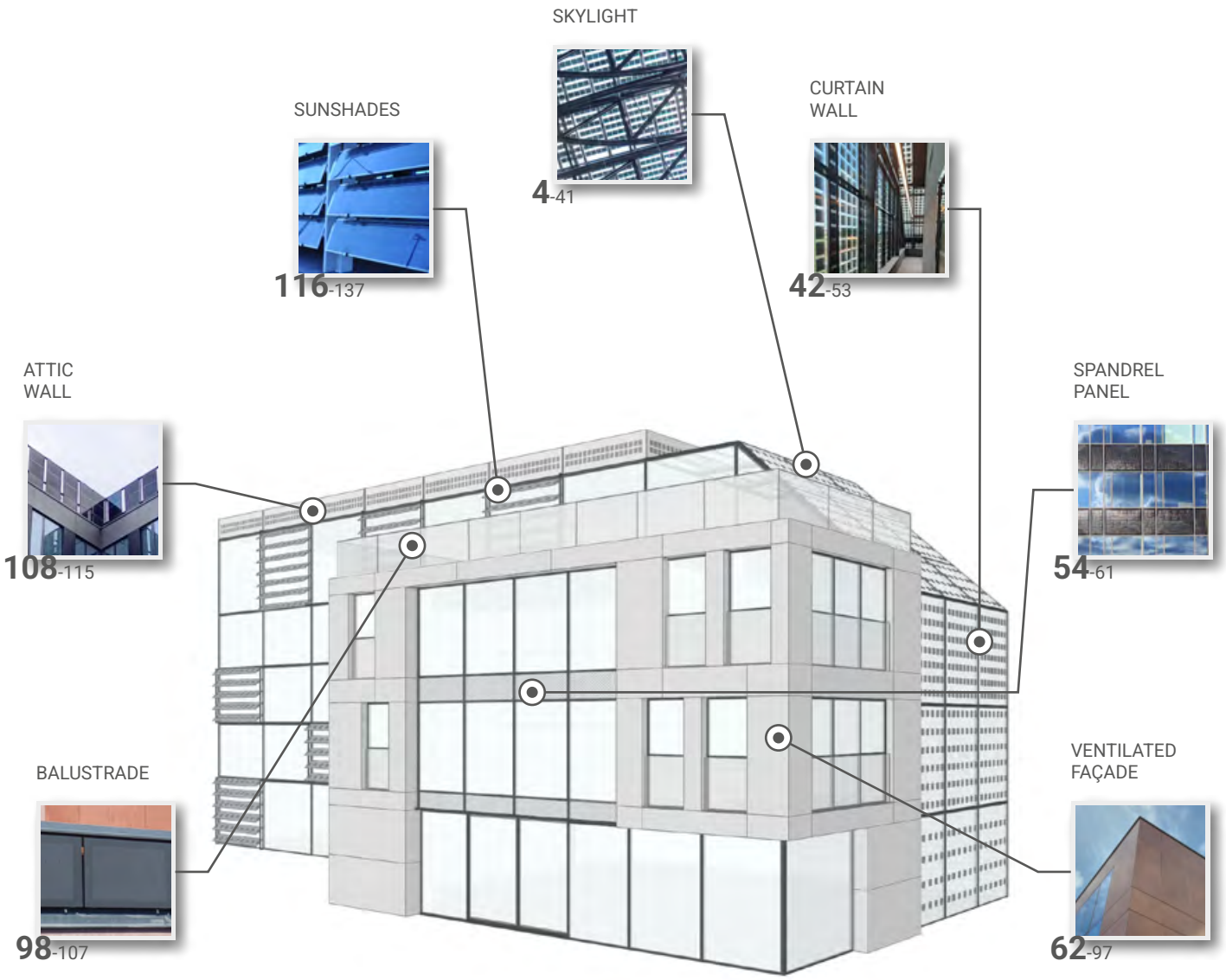
BENEFITS OF USING BIPV – BUILDING INTEGRATED PHOTOVOLTAICS

BIPV It is the possibility of obtaining an ESG (Environmental, Social, and Governance) Certificate for the building.

BIPV It is the only active building material that generates income from the moment it is activated.

BIPV It is efficient energy production during the summer period, when the air conditioning system creates the highest energy demand.

BIPV ARE GREEN ENERGY SOLUTIONS INTEGRATED WITH ARCHITECTURE



MODULE POWER BIPV Up to 1200 Wp

THE CONCEPTUAL DESIGN STAGE IS THE IDEAL TIME TO CHOOSE BIPV SOLUTIONS.

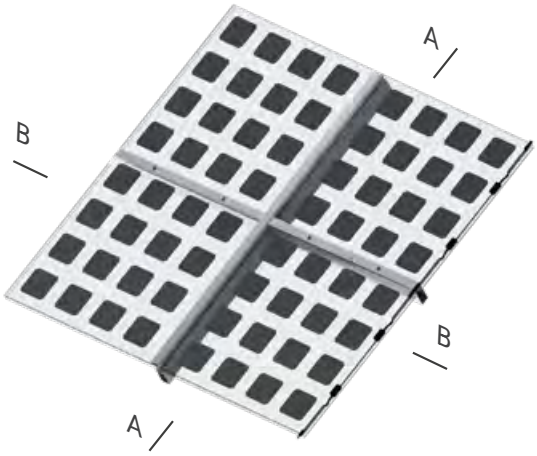
The concept is the beginning of the design process, and very often technical solutions are selected at this stage. In modern buildings, a favorable energy balance — achieved through renewable energy sources — is of great importance. BIPV (Building Integrated Photovoltaic) is among the most commonly chosen renewable energy solutions, offering innovative, customized approaches that demonstrate a commitment to the environment—an aspect that is crucial throughout the entire investment process.

SKYLIGHTS

BIPV

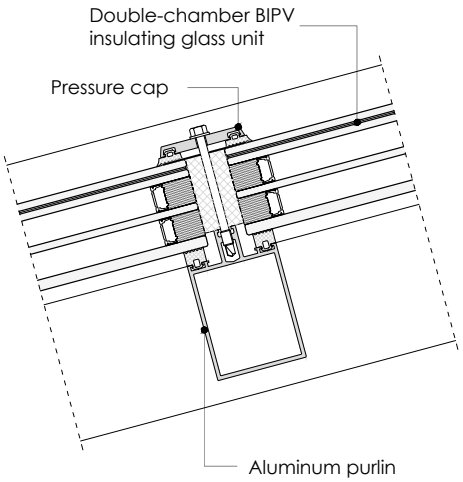
4

BIPV Skylight
utilizes the most sun- exposed surfaces of the building. ML System, in glass assemblies, can vary the density of photovoltaic elements to create an active sun- shading filter. Ceramic printing allows for achieving any desired color on the skylight surface.

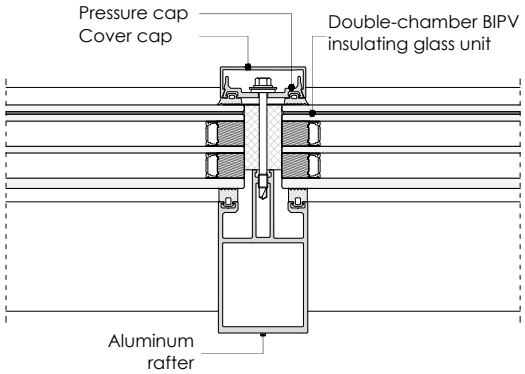


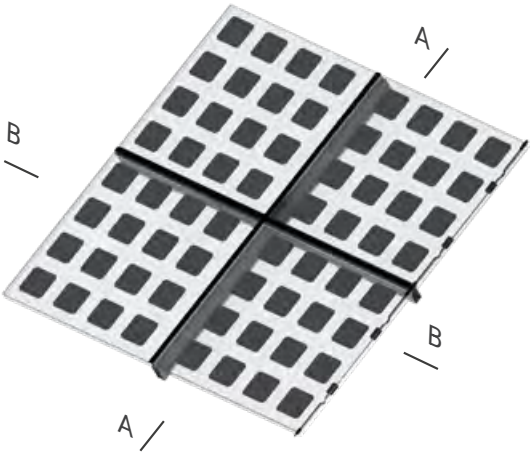
SKYLIGHT
WITH MASKING CAPS

A-A



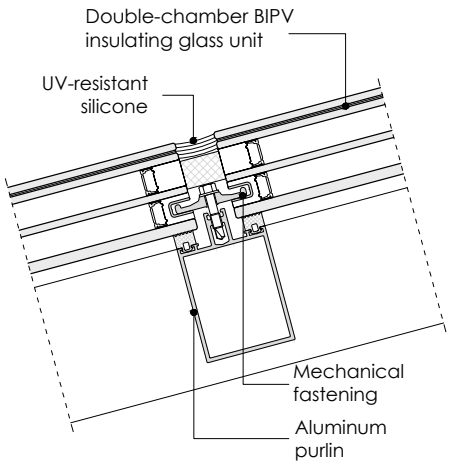
B-B





STRUCTURAL
SKYLIGHT

A-A



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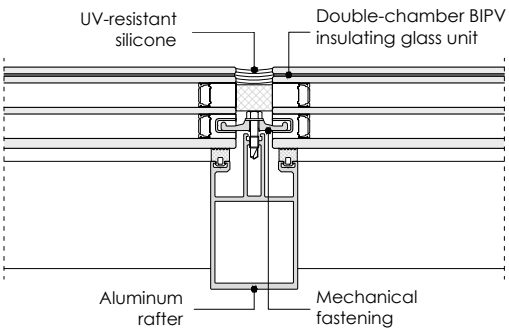


LT

ARTERY VILNIUS

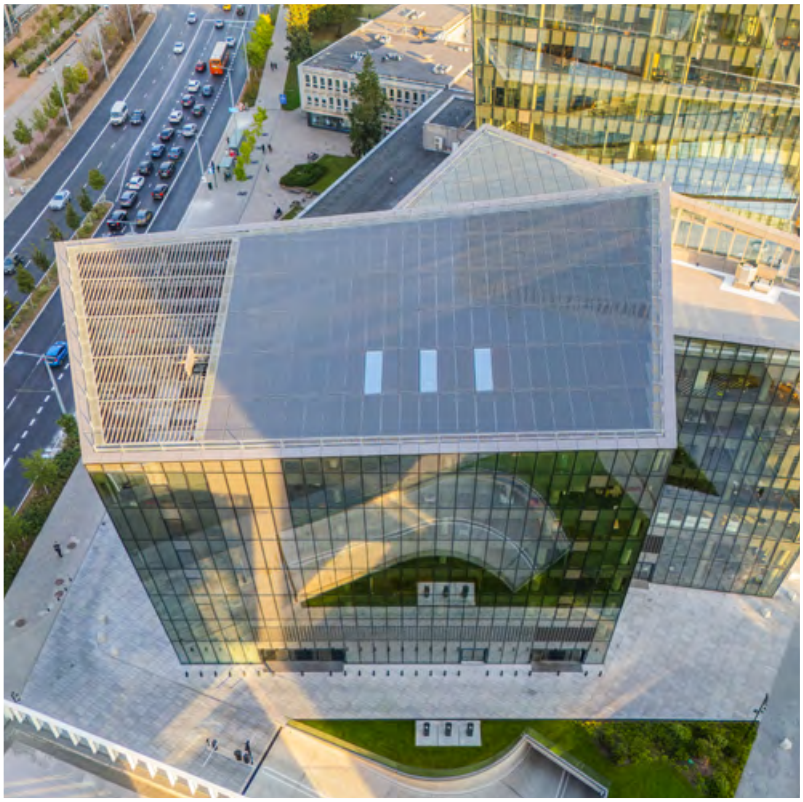
Project:
Artery Office Building

Location:
Vilnius, Lithuania

Design:
Studio Libeskind, Archinova

Type of investment:
New construction

BIPV installation:
Surface: 499 m²
Power output: 55,3 kWp



The Artery office building in Vilnius, standing 84 meters tall with 20 floors, is distinguished by its unique architectural and engineering solutions. The project incorporates numerous innovations aimed at saving and generating electricity, including a special elevator system and a photovoltaic power plant. A photovoltaic installation covering 500 m² was planned on the skylight of the lower section, which serves as a multifunctional atrium. The architectural requirement for module aesthetics necessitated custom color solutions, achieved through ceramic printing on specially manufactured glass modules. The trapezoidal shape of the roof resulted in irregular edge modules. The building has achieved the highest A+ energy classification and meets the criteria of the BREEAM Certificate at the Excellent level.

ML System products:

BIPV Skylight with
opaque glass-glass modules

PL

WFOŚIGW OFFICE ŁÓDŹ

Project:
Office Building of the Regional Fund for Environmental Protection and Water Management

Location:
Łódź, Poland

Design:
Kontrapunkt V-projekt

Type of investment:
New construction

BIPV installation:
Surface: 48 m²
Power output: 5 kWp

The office building of the Regional Fund for Environmental Protection and Water Management is located in Łódź, and its architecture undoubtedly contributes to the modern image of this growing city. The building features a glazed, representative atrium. Looking upward, one sees an open space covered with a skylight. The surface of this skylight is filled with a grid of photovoltaic modules that gently diffuse light. The design is enhanced by pendant lights suspended at varying heights. Thanks to structural bonding technology, the photovoltaic skylight has a completely flat surface, allowing for a minimal roof slope. All these elements combine to create a glass, cubic interior for the building's entrance zone.

ML System products:

BIPV Skylight with transparent glass-glass modules

AT

RAILWAY STATION SIERNDORF

Sierndorf Bahnhof ÖBB, by Arch. Georg Reinberg, Sierndorf (Niederösterreich): PV Bahnsteigdach © Sophia Tosti

Project:
Austrian Federal Railways Station Building

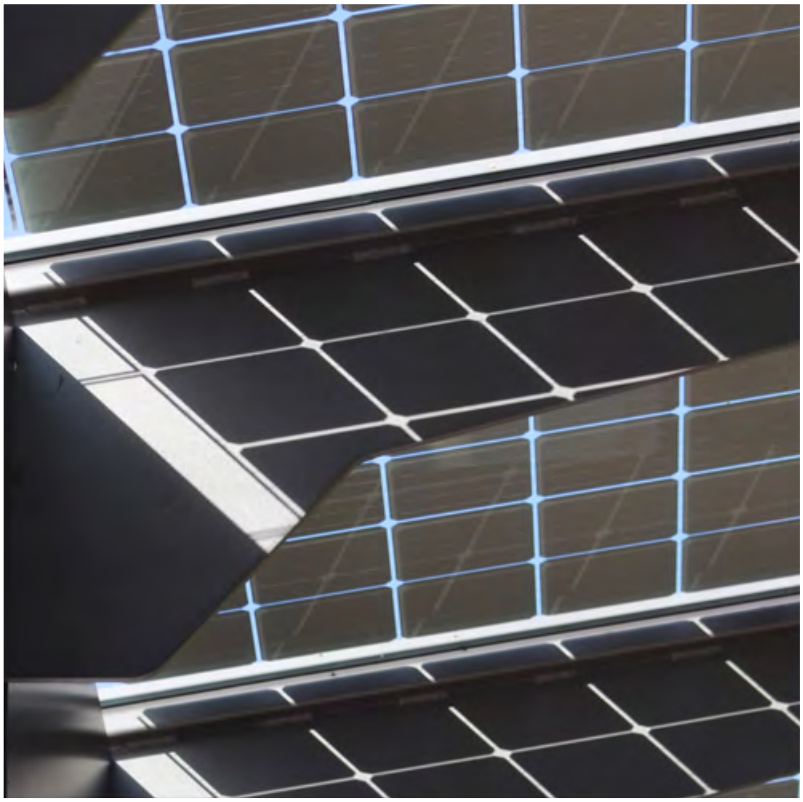
Location:
Sierndorf, Austria

Design:
Architekturbüro Reinberg ZT

Type of investment:
Renovation

BIPV installation:
Surface: 121 m²
Power output: 16.8 kWp

Sierndorf Bahnhof ÖBB; by Arch. Georg Reinberg
Sierndorf (Niederösterreich) PV Bahnsteigdach © Sophia Goth



ML System products:

BIPV Skylight with transparent glass-glass modules

ÖBB (Österreichische Bundesbahnen), Austria's largest railway operator, manages a vast transport network and owns about 3,900 buildings, including over 1,000 passenger stations. As part of its 2030/2040 modernization and decarbonization strategy, ÖBB is optimizing buildings to increase energy efficiency using renewable sources like photovoltaics. In Sierndorf, near Vienna, custom BIPV systems were installed during station renovations. Large-format glass-glass modules with densely packed PV cells were mounted on steel canopies, creating a modern appearance, producing green energy, and improving passenger comfort.

NL

AERES UNIVERSITY ALMERE

Project:
Aeres University Building

Location:
Almere, Netherlands

Design:
BDG Architects

Type of investment:
New construction

BIPV installation:
Surface: 653 m²
Power output: 87 kWp

The Aeres building in Almere features a lush green roof that creates both an inviting space and an inspiring learning environment. Four hundred semi-transparent photovoltaic glazing units were installed, providing sun protection, reducing building heat gain, and contributing positively to the building's energy balance. The roof serves as a meeting space and garden designed to support local biodiversity, including the planting of large trees. The entire building is managed by an automated system that controls daylight intensity, ventilation, and overall energy consumption. Ground-source heat storage is used for heating and cooling.

ML System products:

BIPV Skylight with transparent glass-glass modules

PL

GREEN MARKET JASŁO

Project:
Market Square Canopy – Green Market

Location:
Jasło, Poland

Design:
Arch. Katarzyna Łachańska
Arch. Magdalena Łachańska

Type of investment:
Expansion

BIPV installation:
Surface: 570 m²
Power output: 37 kWp

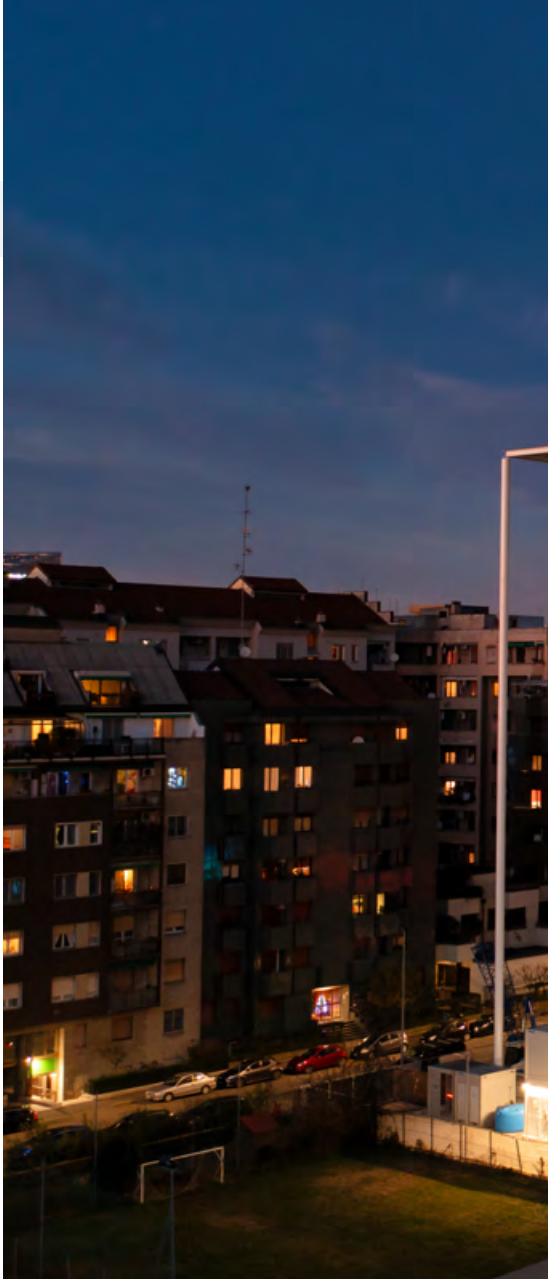
The Green Market is a key gathering spot for residents of Jasło in the Podkarpackie region, offering fresh local vegetables, fruits, flowers, and ornamental plants. After renovation, the market square was covered with a modern canopy made of glued laminated timber, steel, glass, and photovoltaic modules. The BIPV glass modules are attached to the timber structure using stainless steel point-fixing elements. The photovoltaic cells create a grid that lets light through while providing shade to reduce heat. This glazed photovoltaic roof improves the market's comfort and usability, while also generating energy for a nearby municipal building.

ML System products:

BIPV Skylight with transparent glass-glass modules

IT

BANK BFF MEDIOLAN



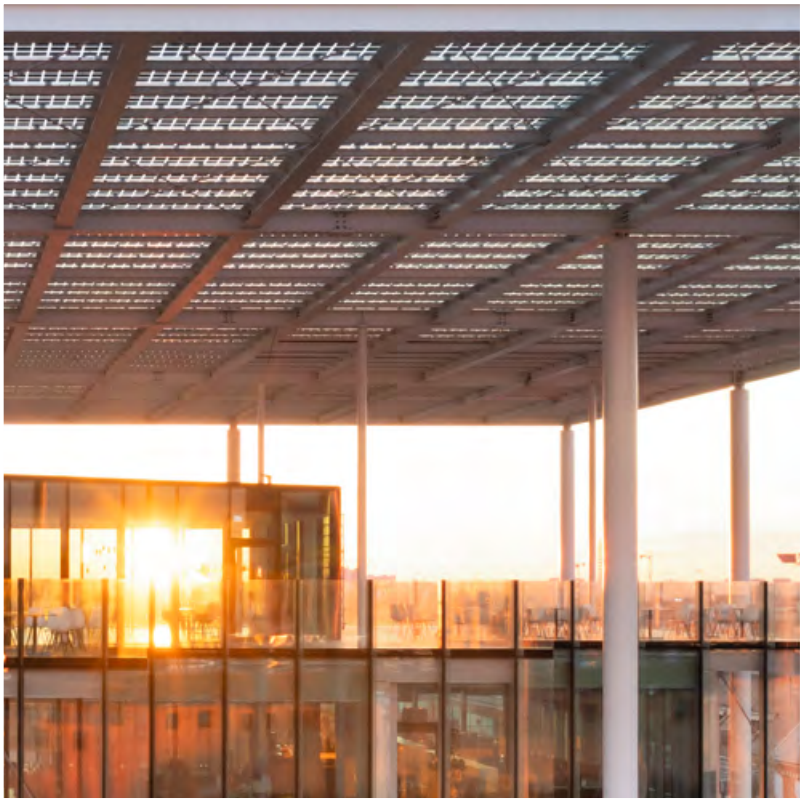
Project:
BFF Bank Building

Location:
Milan, Italy

Design:
OBR

Type of investment:
New construction

BIPV installation:
Surface: 2197 m²
Power output: 320 kWp



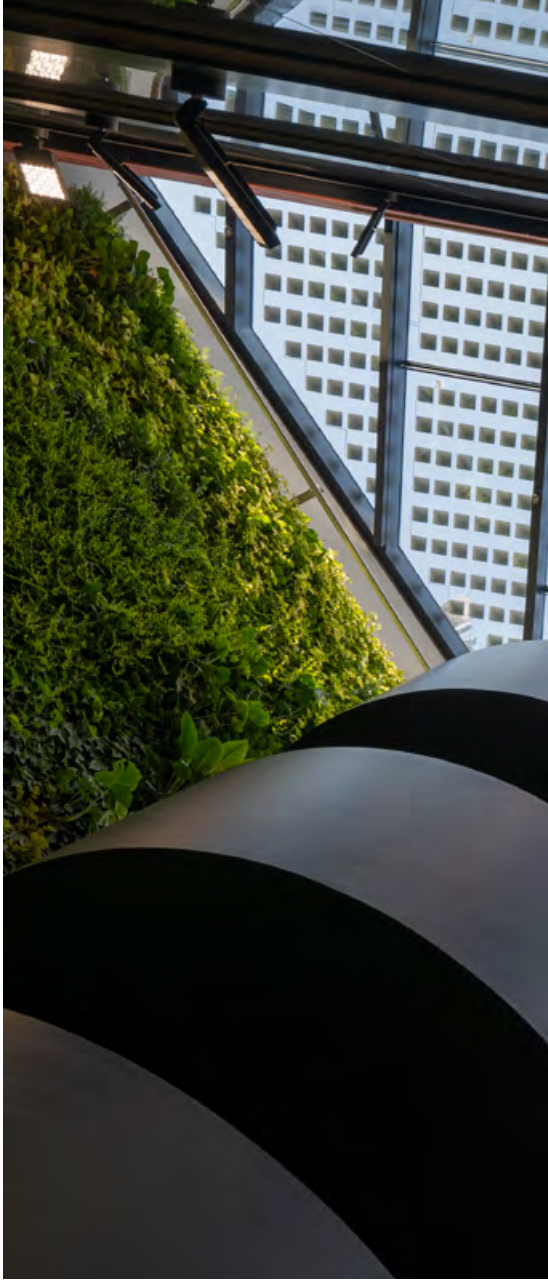
The BFF Bank building, located on Viale Scarampo near one of Milan's main city gateways, functions not only as a bank but also houses an auditorium and a museum showcasing the bank's contemporary art collection. The surrounding area is defined by a 40-meters portico supporting a large roof made of BIPV photovoltaic modules. The underside of these modules is finished in white, enhancing the roof's visual lightness, which, supported by a delicate structural framework, seems to float above the building. With LEED Platinum and WELL Gold certifications, the building meets the highest environmental standards set by the BFF Financial Group.

ML System products:

BIPV Skylight with transparent glass-glass modules

DE

IGH OFFICE BONN



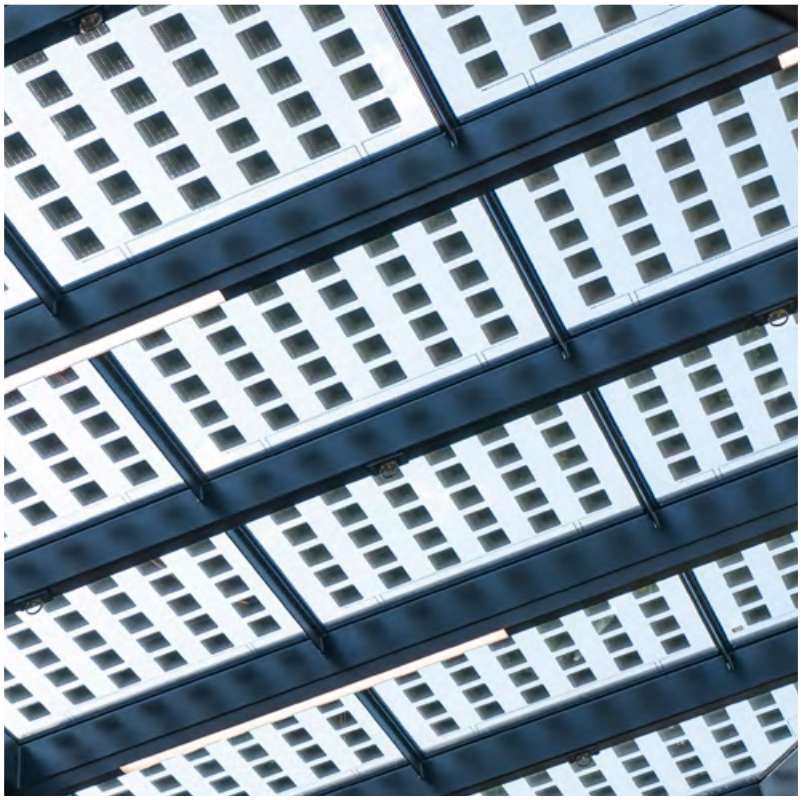
Project:
Innovation Green House Office Building

Location:
Bonn, Germany

Design:
GPG Architekur

Type of investment:
New construction

BIPV installation:
Surface: 140 m²
Power output: 16 kWp



Innovation Green House in Bonn is a building championing eco-friendly and resource-efficient architecture. From the project phase, it was registered for DGNB certification (German Sustainable Building Council) and awarded the "Sustainable Buildings" Quality Mark (QNG). A key feature is the atrium illuminated by a glass photovoltaic roof with an impressive "green wall." Spiral staircases connect all floors, making the atrium an attractive meeting and relaxation space for employees and visitors. The building's sustainability extends beyond operational energy usage to encompass the entire lifecycle, including material production and recycling.

ML System products:

BIPV Skylight with transparent glass-glass modules

PL

STATE ARCHIVE RZESZÓW

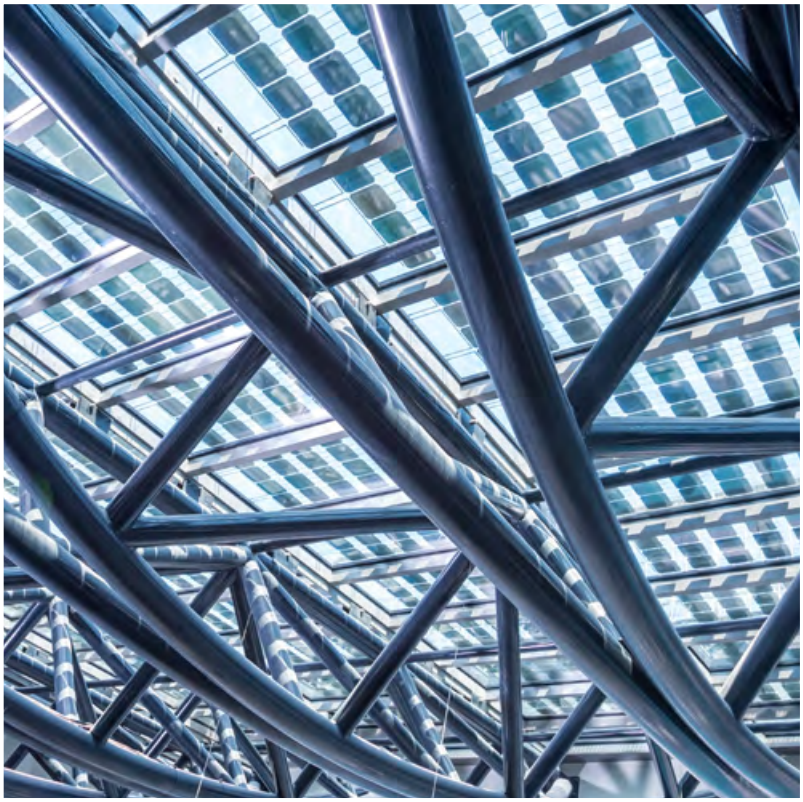
Project:
State Archive Building

Location:
Rzeszów, Poland

Design:
CZEGEKO Architekci

Type of investment:
New construction

BIPV installation:
Surface: 58 m²
Power output: 5,4 kWp



The modern State Archive building in Rzeszów features BIPV solutions that generate energy on-site. These systems are not visible on the façade; instead, the architect placed them on the glazed roof above the internal atrium. The atrium acts as the building's communication hub and offers a welcoming, representative space. Its illuminated interior impresses with a lightweight openwork steel structure, a carefully chosen color palette, and minimalist lighting fixtures. Above, transparent glass modules with photovoltaic cells capture solar energy while filtering intense sunlight. These modules also include a heating function, boosting overall energy production efficiency.

ML System products:

BIPV Skylight with transparent glass-glass modules

NO

MARINA HAMAR

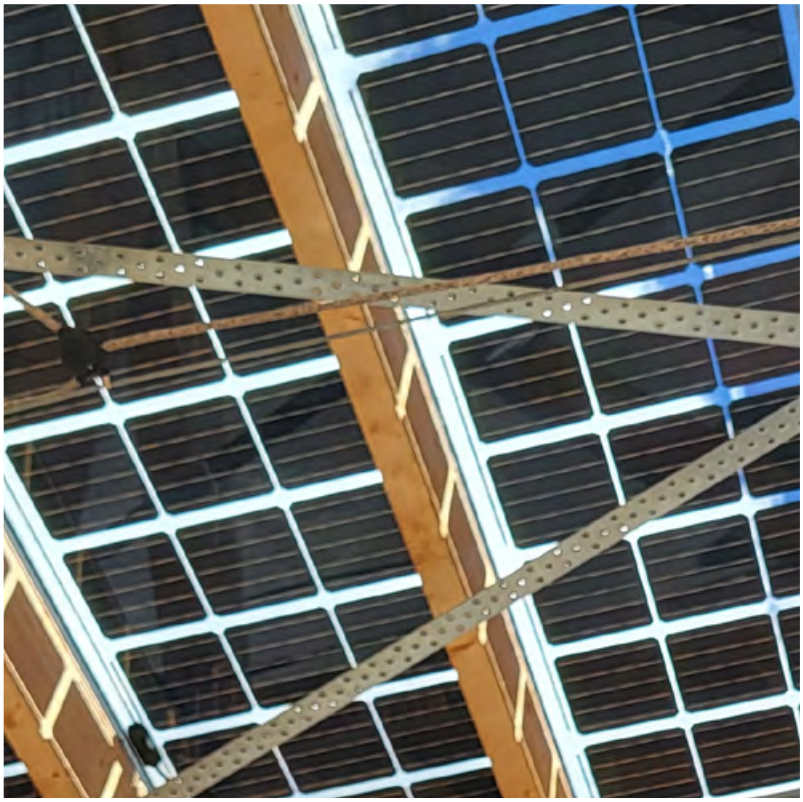
Project:
Canopy at the Hamar Marina

Location:
Hamar, Norway

Design:
C.F. Møller Architects

Type of investment:
Expansion

BIPV installation:
Surface: 100 m²
Power output: 13 kWp



At the marina in Hamar, a town on the shores of Mjøsa—the largest lake in Norway—a canopy structure has been constructed. The traditional timber design creates a welcoming space that has become a popular meeting and leisure spot for both sailors and local residents. Alongside sailing facilities, beverages and meals are served on-site. The glass roof, integrated with photovoltaic cells, provides shade and rain protection. The modern mosaic of solar cells within the transparent skylight blends beautifully with the wooden structure. The energy generated powers lighting, surveillance cameras, and other marina infrastructure.

ML System products:

BIPV Skylight with transparent glass-glass modules

PL

POJNARÓWKA CAFE KRAKÓW

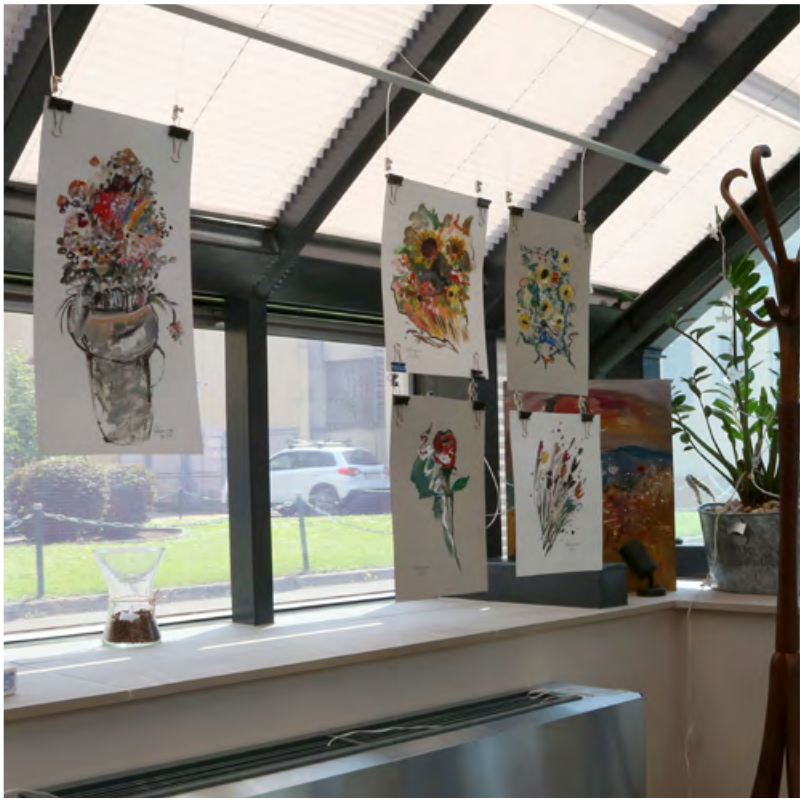
Project:
Pojnarówka Café Building – University of Agriculture

Location:
Krakow, Poland

Design:
Arch. Arkadiusz Miśkiewicz

Type of investment:
Renovation

BIPV installation:
Surface: 170 m²
Power output: 7 kWp



Pojnarówka is an Art Nouveau greenhouse built in 1912, located in the former garden of the University of Agriculture in Krakow. Thanks to the university's efforts, the historic greenhouse has been transformed into a café that hosts intimate concerts, art exhibitions, and children's workshops. A new structure was added featuring glass integrated with photovoltaic cells. These cells, embedded in the glass roof panels using thin-film technology, form a delicate photovoltaic layer that also acts as a solar filter for the café's interior. The electricity generated powers advanced ventilation and air-conditioning systems, as well as the adjacent University server room.

ML System products:

BIPV Skylight with transparent glass-glass modules

Project:
Parking canopy Klagenfurt Clinic

Location:
Klagenfurt, Austria

Technical design:
ML System

Type of investment:
Expansion

BIPV installation:
Surface: 230 m²
Power output: 35 kWp

ML System products:

BIPV Skylight with transparent glass-glass modules

The glazed, two-story hospital building blends harmoniously with the surrounding landscape and natural environment. Resembling a garden city, it borders the floodplain of the Glan River and impresses with its transparency and green landscape. The university hospital employs 4,000 staff and serves 300,000 outpatients and 80,000 inpatients annually. The Klagenfurt Clinic holds the “EU Green Building” certification. To enhance user comfort, the hospital added canopies at the entrances to the underground parking facilities. These modernist steel structures are covered with glass BIPV modules that generate electricity and seamlessly integrate into the clinic’s minimalist architecture.

PL

TAURON OFFICE KRAKÓW

Project:
Tauron Office Building

Location:
Krakow, Poland

Design:
Agencja Projektowa
Architektury Ekspo

Type of investment:
New construction

BIPV installation:
Surface: 39,6 m²
Power output: 330 kWp

Tauron Group, one of Poland's largest energy companies involved in electricity generation, distribution, and sales, has a new office building in Krakow's trendy Kazimierz district. This three-story building offers 11,000 m² of office space for employees. Next to the main office are multi-level garages topped with a BIPV canopy. The glass modules are mounted on a custom aluminum structure, with a cascading layout that ensures weather tightness and comfort for the garage area. As a strong promoter of renewable energy, Tauron consistently integrates BIPV solutions into its new projects.

ML System products:

BIPV Skylight with transparent glass-glass modules

HR

CAMPUS OSIJEK

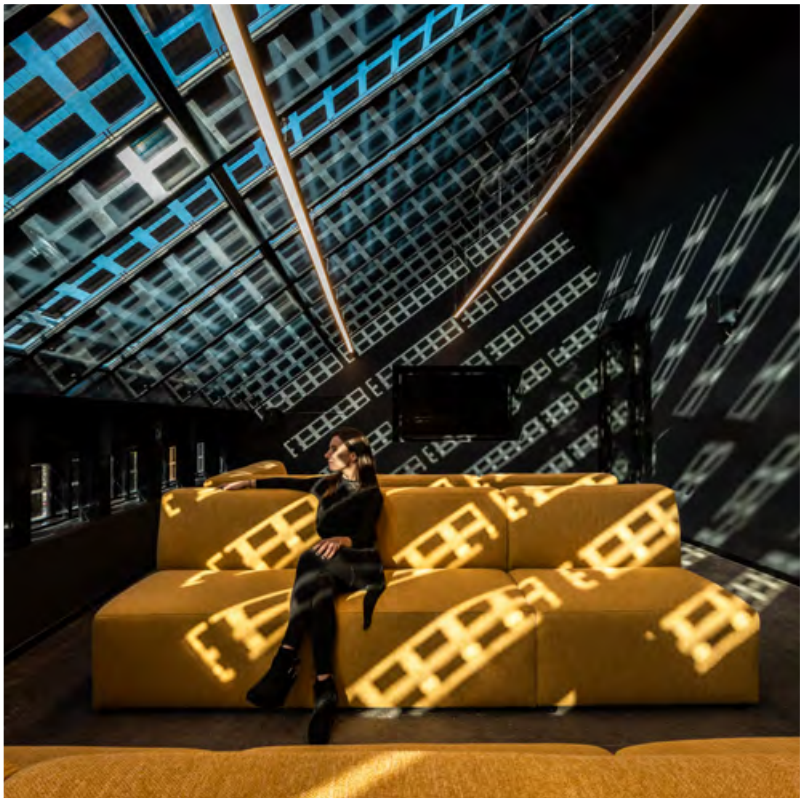
Project:
Campus Building – J.J. Strossmayer University

Location:
Osijek, Croatia

Design:
NFO Architects

Type of investment:
New construction

BIPV installation:
Surface: 424 m²
Power output: 42 kWp



A new student dormitory pavilion has been built on the university campus in Osijek. Alongside two existing buildings, it creates a public square forming part of the entrance to the expanding academic district. The energy-efficient building holds an A+ energy rating, using eco-friendly materials and renewable energy sources. Its façade is clad in ventilated fiber cement panels designed for energy savings. Integrated photovoltaic installations generate electricity, with BIPV façades and a skylight supplying the building's power needs. Photovoltaics are a defining feature of this modern, environmentally conscious structure. The energy-active BIPV skylight also brightens the interior and emphasizes the building's functional zones.

ML System products:

BIPV Skylight with transparent glass-glass modules

PL

MUSIC EDUCATION CENTER KATOWICE

Quantum coating

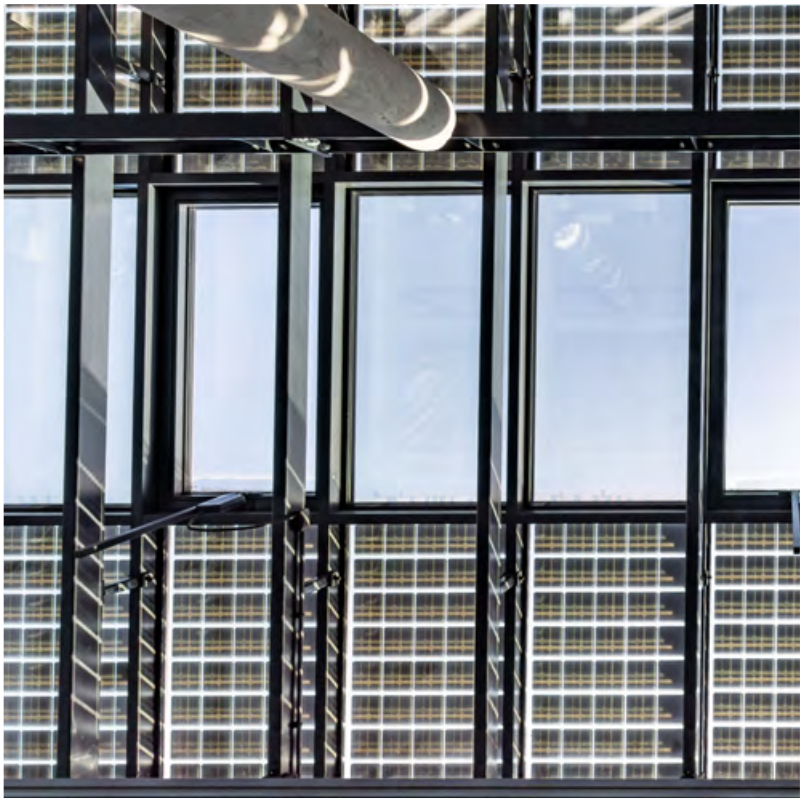
Project:
Music Education Center “Dom Kilara”

Location:
Katowice, Poland

Design:
Perbo Projekt

Type of investment:
Expansion

BIPV installation:
Surface: 78 m²
Power output: 10 kWp



The Music Education Center was established on the site where composer Wojciech Kilar lived and worked. It combines museum and educational functions by integrating the composer's former home with a newly constructed wing. Modern exhibition facilities are paired with a strong ecological focus. The new wing features various renewable energy solutions, including roof-mounted photovoltaic modules, a ventilated BIPV façade, and a BIPV skylight. The skylight modules come in two variants: fully transparent with a quantum coating, and transparent with visible photovoltaic cells. All modules include a heating layer that boosts energy yield efficiency, regardless of the technology used.

ML System products:

BIPV Skylight with transparent glass-glass modules

SE

HOTEL HOUSE OF CHOICE STOKHOLM

Net-Zero
Energy Building

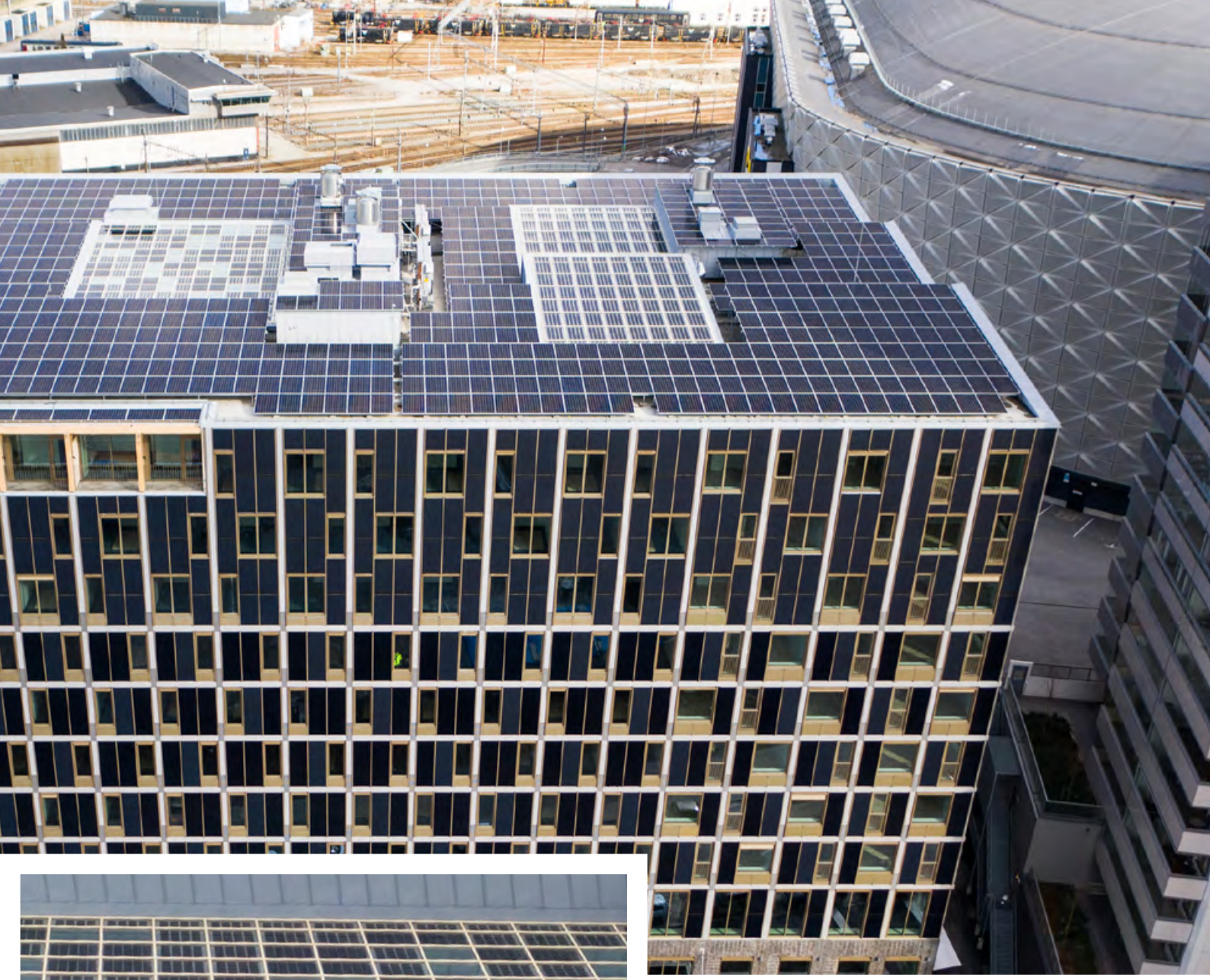
Project:
House of Choice Hotel Building

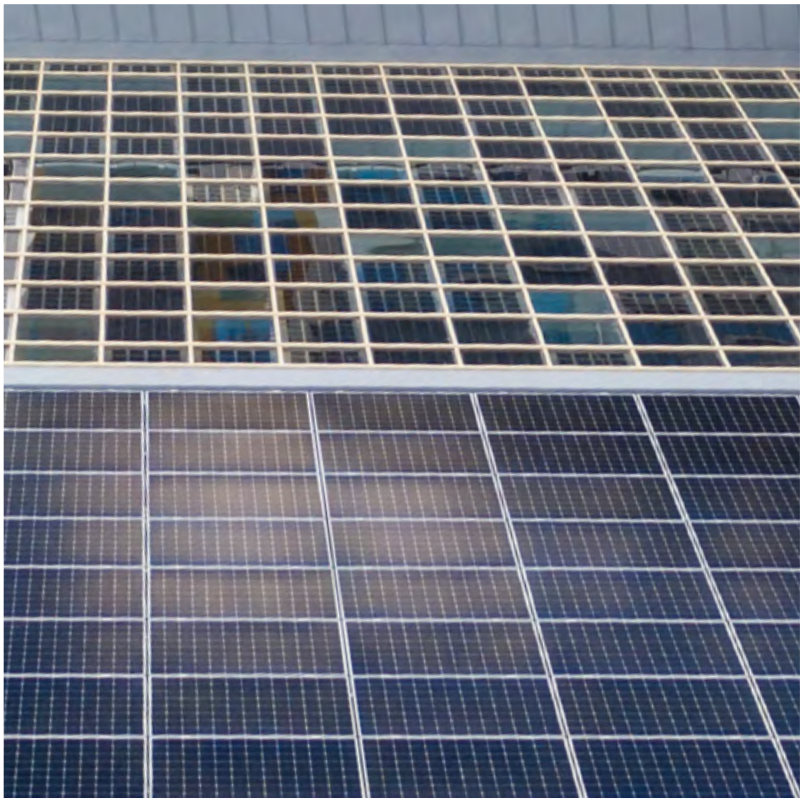
Location:
Stockholm, Sweden

Design:
White Arkitekter

Type of investment:
New construction

BIPV installation:
Surface: 300 m²
Power output: 30 kWp





The House of Choice Hotel in Stockholm is Scandinavia's first zero-energy hotel. Architects at White Arkitekter designed the building to inspire guests toward an eco-conscious lifestyle. Using geothermal energy and photovoltaic systems covering 2,500 m², the hotel operates sustainably. A key renewable energy and architectural feature is the set of three BIPV skylights above the central atrium. The carefully arranged photovoltaic cells within the glazing ensure ample daylight while minimizing heat gain. The hotel holds a BREEAM Excellent rating and recently received the FEBY Guld Plushus certification.

ML System products:

BIPV Skylight with transparent glass-glass modules

PL

CKS PG TECHNICAL UNIVERSITY GLIWICE

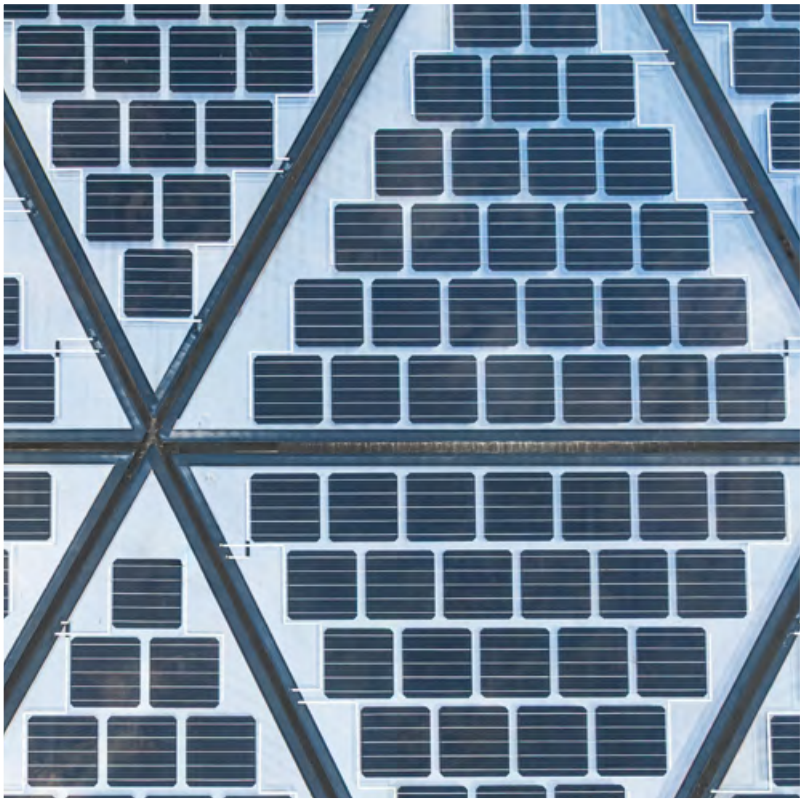
Project:
Educational Building – Student Creativity Center of the Silesian University of Technology

Location:
Gliwice, Poland

Design:
Arch. Karol Bulanda

Type of investment:
Expansion

BIPV installation:
Surface: 82 m²
Power output: 9 kWp



The Student Creativity Center of the Silesian University of Technology is housed in a revitalized former stable on Akademicka Street in Gliwice. Originally with a flat roof, the building was transformed during renovation by adding a glazed upper floor that transitions into a glass roof. The triangular-section skylight incorporates photovoltaic glass units. This new space serves as a dynamic venue for meetings, consultations, workshops, debates, and seminars. The building includes areas for individual and group work, an exhibition space, and a small cinema. By integrating BIPV technology with the glass roof, the 19th-century building has gained a modern look that harmoniously blends with its traditional architecture.

ML System products:

BIPV Skylight
Opaque glass-glass modules

NL

DC4 LOGISTIC EINDHOVEN

ZERO CARBON CERTIFICATION

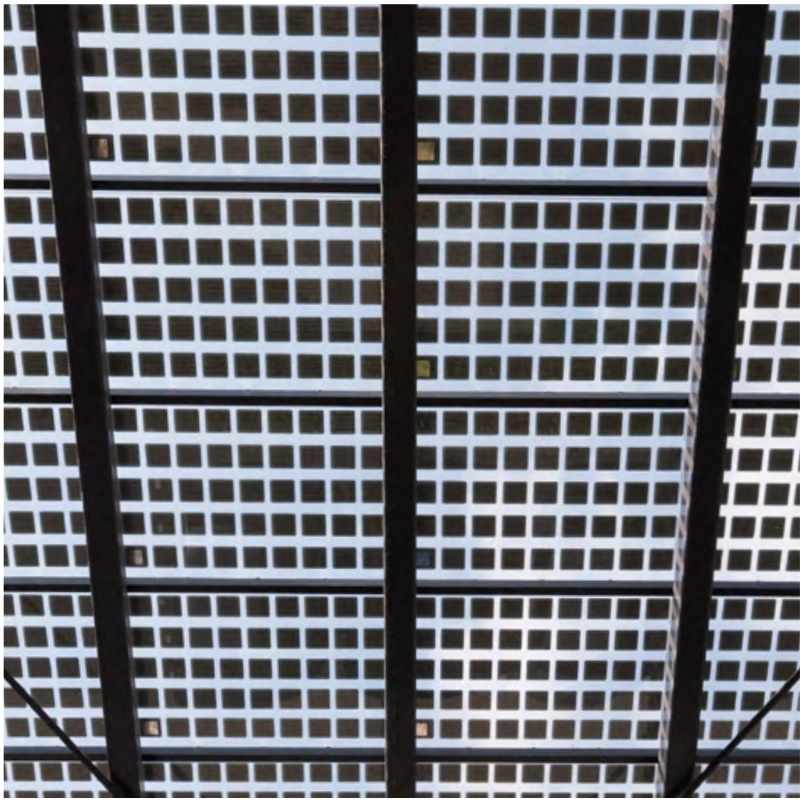
Project:
Logistics Building:
DC 4 – Prologis Park

Location:
Eindhoven, Netherlands

Design:
Johan de Vries Architect

Type of investment:
New construction

BIPV installation:
Surface: 290 m²
Power output: 44 kWp



Prologis Park Eindhoven DC4 is the world's first logistics building to earn the Zero Carbon certification from the International Living Future Institute. By using BIPV systems for electricity generation, integrating sustainable materials, and minimizing construction material use, the warehouse and its operations achieve net-zero carbon emissions. Built on a former landfill, the facility also holds BREEAM "Outstanding" and WELL "Gold" certifications. The photovoltaic glazing on the roof canopy produces enough electricity to power the warehouse and offsets the building's total carbon footprint. These results were confirmed after one year of operation, demonstrating the developer's strong environmental commitment.

ML System products:

BIPV Skylight
Opaque glass-glass modules

PL

RAILWAY STATION WEST WARSAW

Project:
West Warsaw Railway Station

Location:
Warsaw, Poland

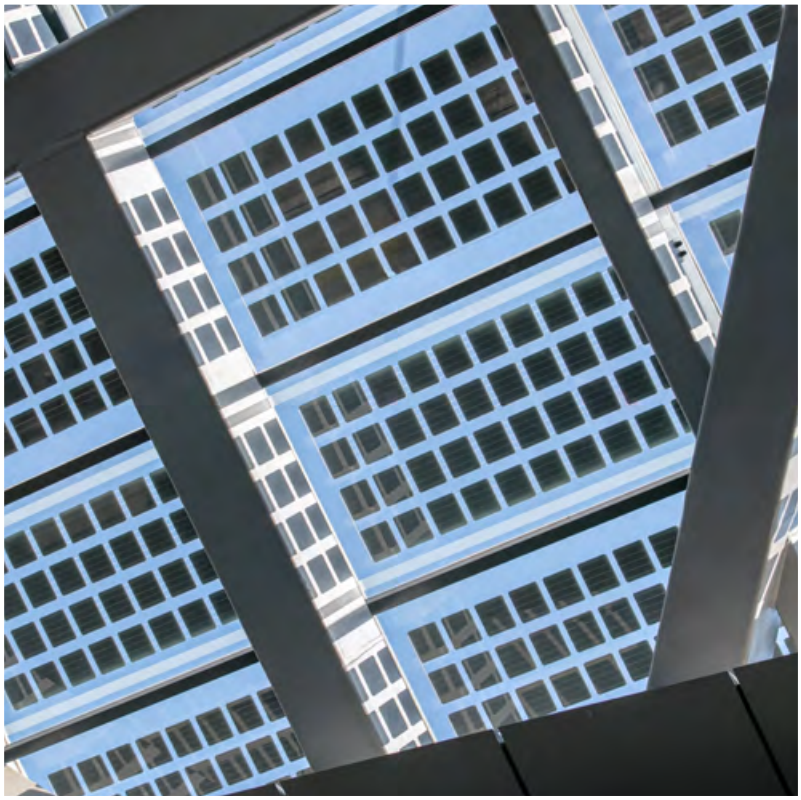
Design:
DWA Architekci

Type of investment:
Expansion

BIPV installation:
Surface: 12 100 m²
Power output: 1,1 MWp

ML System products:

BIPV skylights with transparent glass-glass modules featuring heating functionality



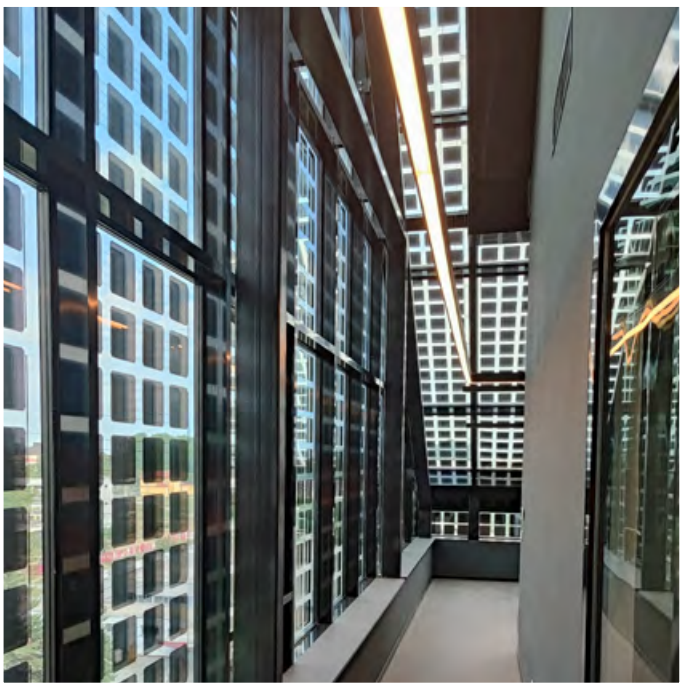
West Warsaw Station has been renovated into an ultra-modern, multifunctional facility where cutting-edge technology meets high quality and aesthetics. Custom-designed BIPV solutions enable the project to harness renewable solar energy, positively impacting the environment. The BIPV roof skylights use transparent modules that generate electricity and include heating and lighting functions. Photovoltaic systems in the skylights and platform roofs produce about 30% of the energy needed to run the entire transport complex. Given current energy costs, the investment in renewable energy is expected to pay off much sooner than initially projected.

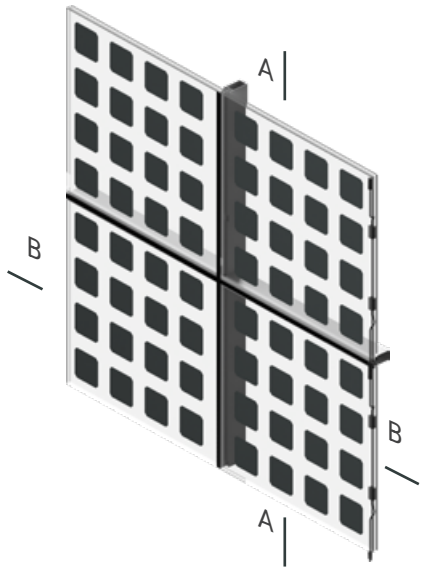
CURTAIN WALLS

BIPV

42

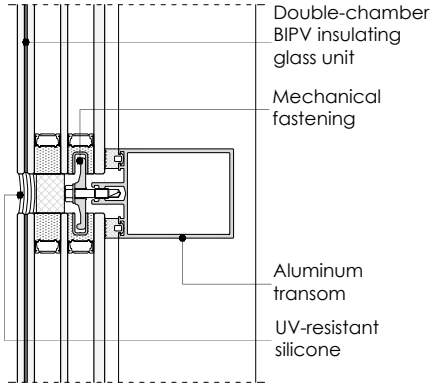
BIPV curtain walls,
through the integration of photovoltaics within the glass panel system, generate energy while also providing additional control over interior sunlight exposure. ML System offers the technical capabilities to support both traditional and structural façade solutions. Aesthetic flexibility is enhanced by the use of coated glass and the option for ceramic printing.



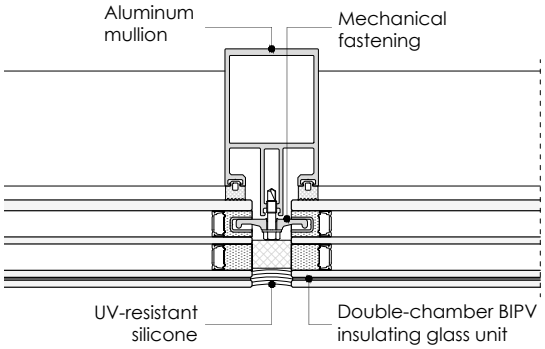


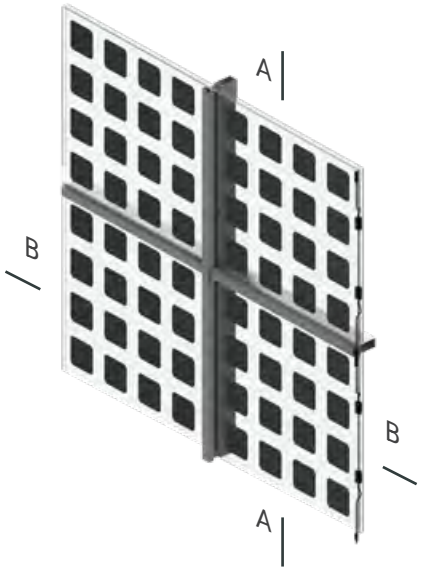
STRUCTURAL
CURTAIN WALL

A-A



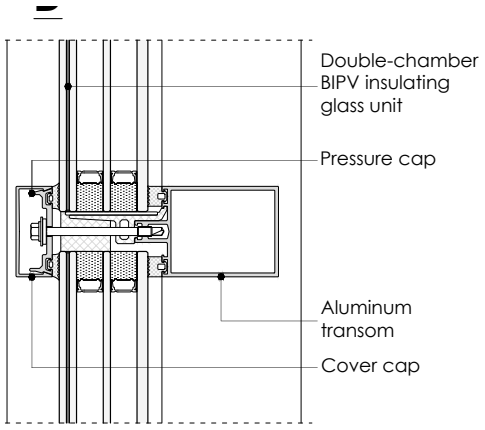
B-B



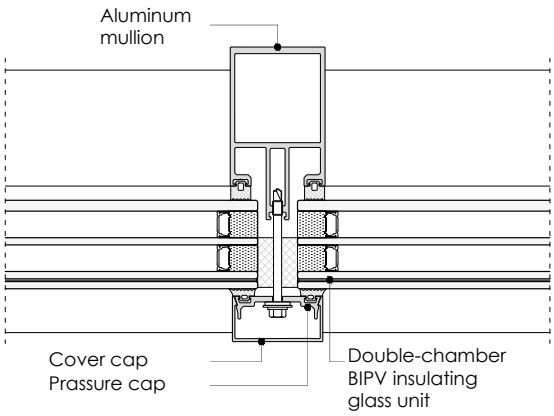


CURTAIN WALL
WITH CONCEALMENT CAPS

A-A



B-B



PL

WUM MEDICAL UNIVERSITY WARSZAWA

Project:

Sports hall -Sports and Rehabilitation Center

Warsaw Medical University

Location:

Warsaw, Poland

Design:

Kontrapunkt V- projekt

Type of investment:

New construction

BIPV installation:

Surface: 936 m²

Power output: 31 kWp

The Sports and Rehabilitation Center of the Medical University of Warsaw consists of three facilities, including the Teaching Building for the Propedeutics of Physiotherapy. This includes a multifunctional gymnasium, a sports hall complex, and specialized classrooms. A notable technical feature is the massive openwork (50 × 12.5 m) wall of the sports hall—a concrete truss structure enclosed by a glazed BIPV curtain wall. This glass façade not only defines the architectural character of the building but also generates energy, acting as a giant mirror reflecting the surrounding greenery. Modern and environmentally friendly solutions significantly reduce the operating costs of the center, which has a total usable floor area of 20,000 m².

ML System products:

BIPV curtain wall
– transparent glass-glass modules

PL

FRONIUS OFFICE GLIWICE

Project:
Fronius Office Building

Location:
Gliwice, Poland

Technical design:
ML System

Type of investment:
New construction

BIPV installation:
Surface: 60 m²
Power output: 9,7 kWp

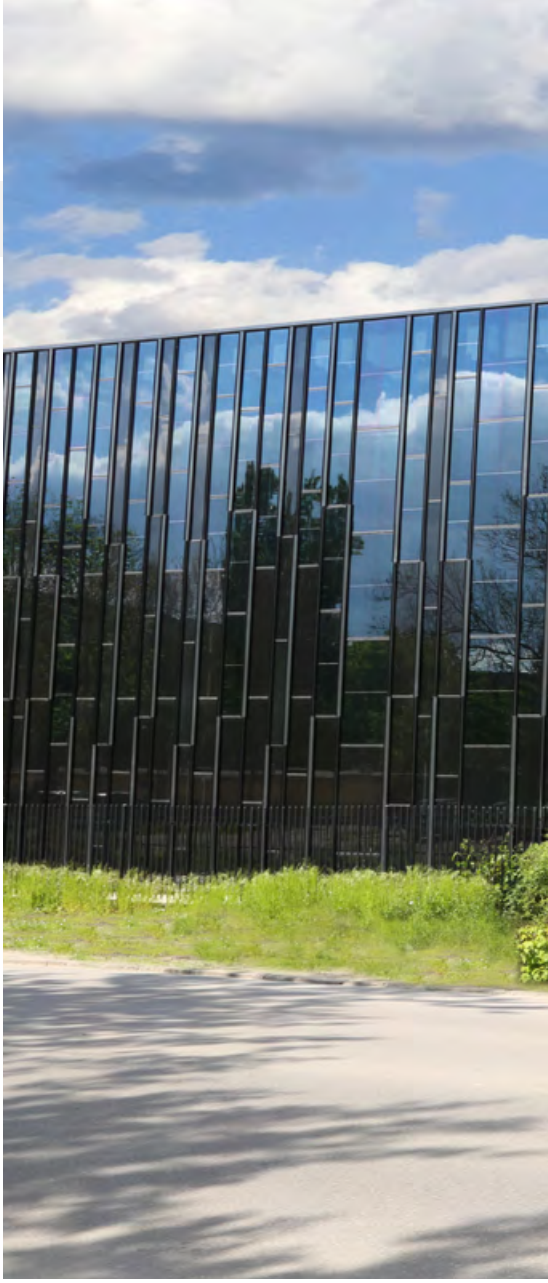
Fronius Gliwice is one of 37 company branches located across all continents. This family-owned business specializes in welding and energy technologies. The Fronius office building in Gliwice features a glazed façade integrated with photovoltaic technology. The glazed section is located within the office area, which is connected to the production hall. Horizontal rows of solar cells emphasize the building's linear form, while the dark graphite tone of the modules contrasts sharply with the red accents on the façade. Fronius utilizes the electricity generated by the BIPV installation to reduce the building's operational costs. True to its mission, the company earns customer trust not only through high quality but also through its commitment to sustainable development.

ML System products:

BIPV curtain wall
– transparent glass-glass modules

PL

WUM MEDICAL UNIVERSITY WARSZAWA



Project:

Swimming hall -Sports and Rehabilitation Center

Warsaw Medical University

Location:

Warsaw, Poland

Design:

Kontrapunkt V- projekt

Type of investment:

New construction

BIPV installation:

Surface: 720 m²

Power output: 35 kWp

The Sports and Rehabilitation Center of the Medical University of Warsaw is a complex of five interconnected buildings, joined by a shared underground level. A significant portion of the center's energy is supplied by renewable sources. One of the buildings houses swimming pools, including an Olympic-sized pool. The glazed façade of the facility is a BIPV curtain wall, transforming solar energy into usable power. The electricity generated is used to heat the pool's process water, and when demand is lower, the solar system supports preheating of domestic hot water. During the summer months, the solar installation provides energy for heating shower and domestic water, as well as maintaining pool water temperature.

ML System products:

BIPV curtain wall
– transparent glass-glass modules

PL

CANPACK OFFICE ORZESZE

Project:
CanPack Office and Production Building

Location:
Orzesze, Poland

Design:
Pro-inwest

Type of investment:
New construction

BIPV installation:
Surface: 574 m²
Power output: 24 kWp

The glassworks in Orzesze manufactures glass packaging for the food and brewing industries. A new office building was constructed on-site, featuring a curved façade made using glazed curtain wall technology. The photovoltaic installation was seamlessly integrated into the façade. Designers utilized the spaces between windows and the parapet strip to achieve a relatively large energy-active surface. The glass modules incorporate an interesting arrangement of solar cells, and visible technical elements along with the structural bonding system contribute to the minimalist and modern appearance of the façade. By prominently showcasing the BIPV system, the project highlights the investor's commitment to environmental sustainability and reinforces a positive corporate image.

ML System products:

BIPV curtain wall
– transparent glass-glass modules

HR

CAMPUS OSIJEK

Project:
Campus Building – J.J. Strossmayer University

Location:
Osijek, Croatia

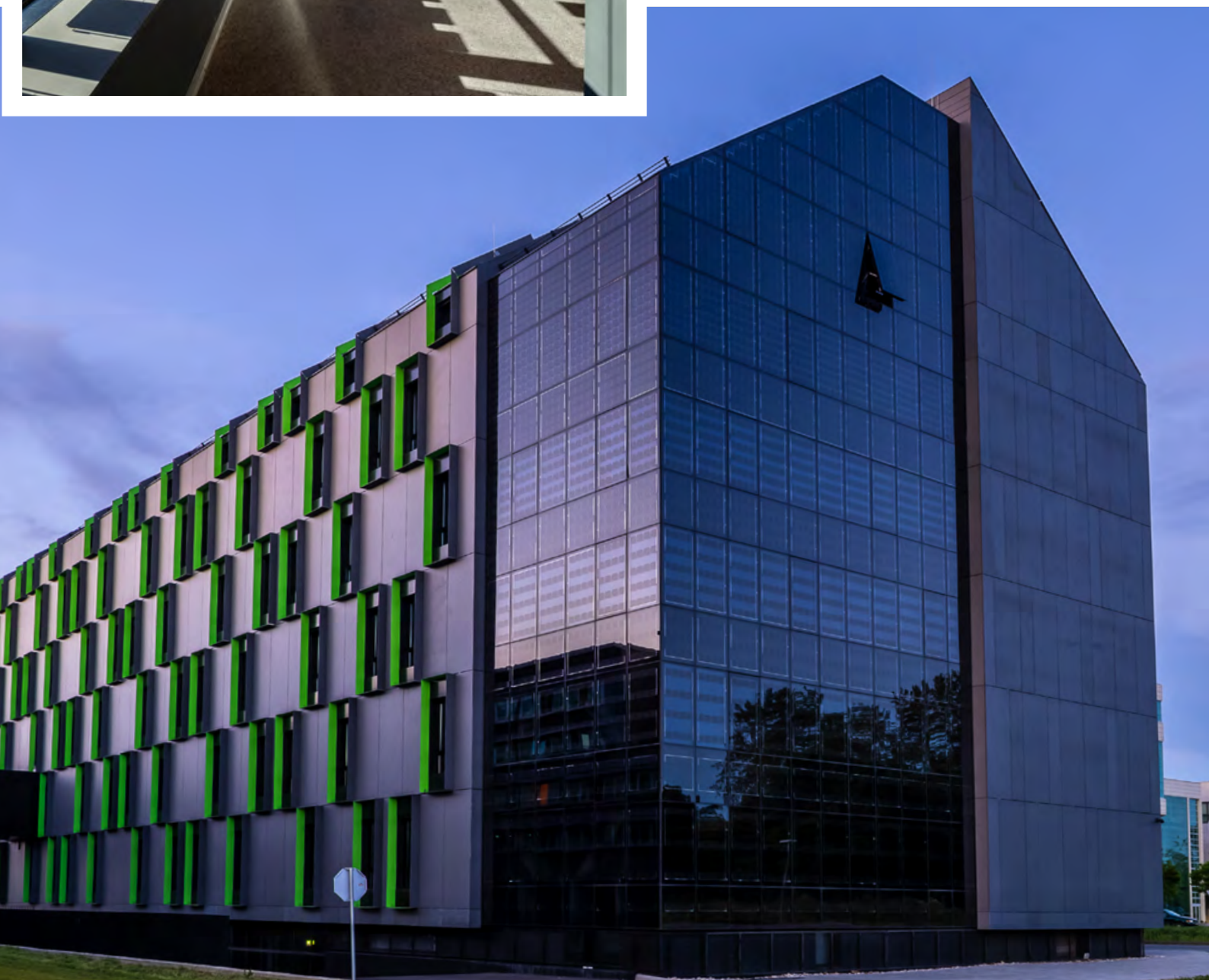
Design:
NFO Architects

BIPV installation:
Surface: 848 m²
Power output: 83 kWp

ML System products:

BIPV curtain wall
– transparent glass-glass modules

A new student dormitory pavilion has been constructed on the campus of the University of Osijek. Together with two existing buildings, it forms a public square that is part of the entrance sequence to the growing academic city. The building is energy-efficient, rated A+, and utilizes environmentally friendly materials and renewable energy sources. Its façade is built with energy-efficient, ventilated fiber cement panels. The structure features integrated photovoltaic systems for energy production. The BIPV glazed façades are entirely filled with glass modules in which the photovoltaic cells are arranged at varying densities. These energy-active BIPV curtain walls illuminate the circulation spaces of this eco-friendly dormitory.

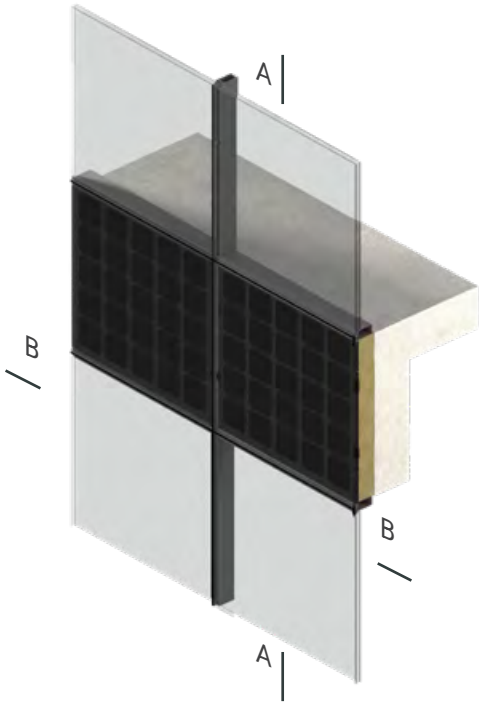


SPANDREL PANELS

BIPV

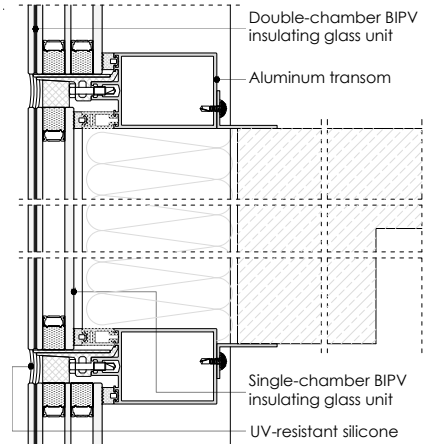
54

BIPV spandrel panels are an innovative solution by ML System designed for opaque floor bands within glazed façades. Aesthetic variations are achieved through the selection of glass color, reflectivity, and the option of ceramic printing. These technological solutions offer full compatibility with both traditional and structural façade systems.

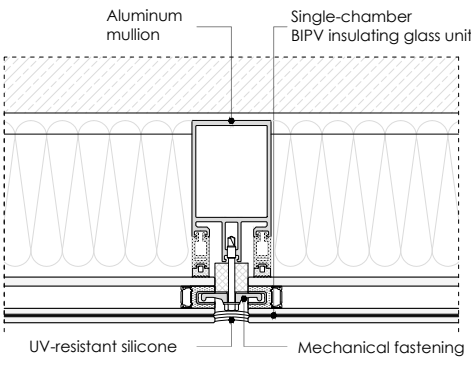


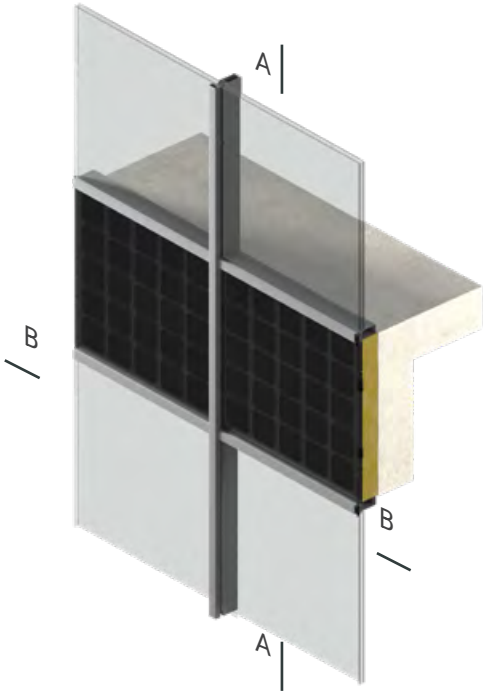
SPANDREL
OF STRUCTURAL
CURTAIN WALL

A-A



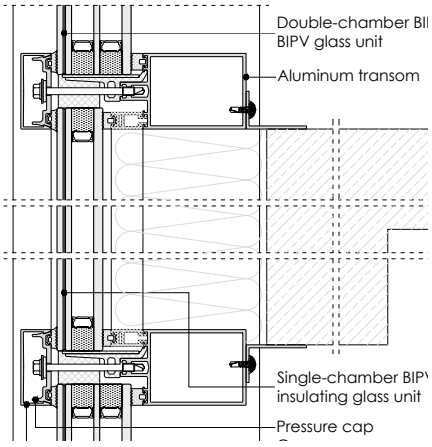
B-B



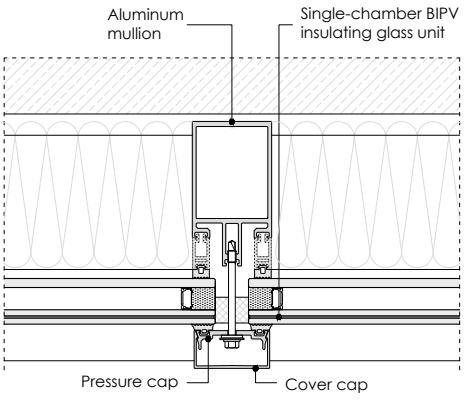


SPANDREL
OF CURTAIN WALL
WITH COVER CAPS

A-A

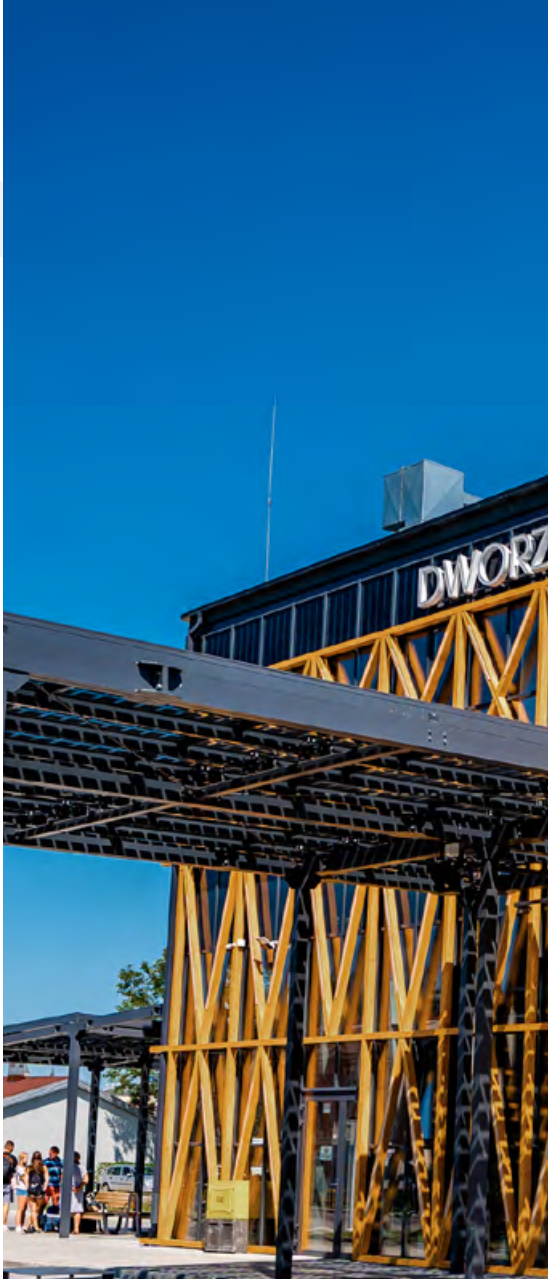


B-B



PL

BUS STATION SANOK



Project:
Transport Hub – Bus Station

Location:
Sanok, Poland

Design:
Biuro A3 Arch. Agnieszka Romanowska

Type of investment:
Renovation

BIPV installation:
Surface: 350 m²
Power output: 44 kWp

The bus station in Sanok is a vital transport hub and city landmark, known as the "Gateway to the Bieszczady Mountains." It underwent comprehensive modernization, gaining a contemporary look and the ability to harness renewable green energy through BIPV solutions. The station features a traditional timber framework creating an eye-catching façade pattern, combined with a modern aluminum façade filled with glass and graphite-colored photovoltaic modules forming opaque BIPV spandrels integrated into the parapet and floor slab. To enhance passenger comfort, a steel canopy with photovoltaic glazing provides electricity and shading, especially during hot summer days.

ML System products:

BIPV curtain wall spandrels
– opaque glass-glass modules

PL

WFOŚIGW OFFICE ŁÓDŹ

Project:

Office Building of the Regional Fund for Environmental Protection and Water Management

Location:

Łódź, Poland

Design:

Kontrapunkt V-projekt

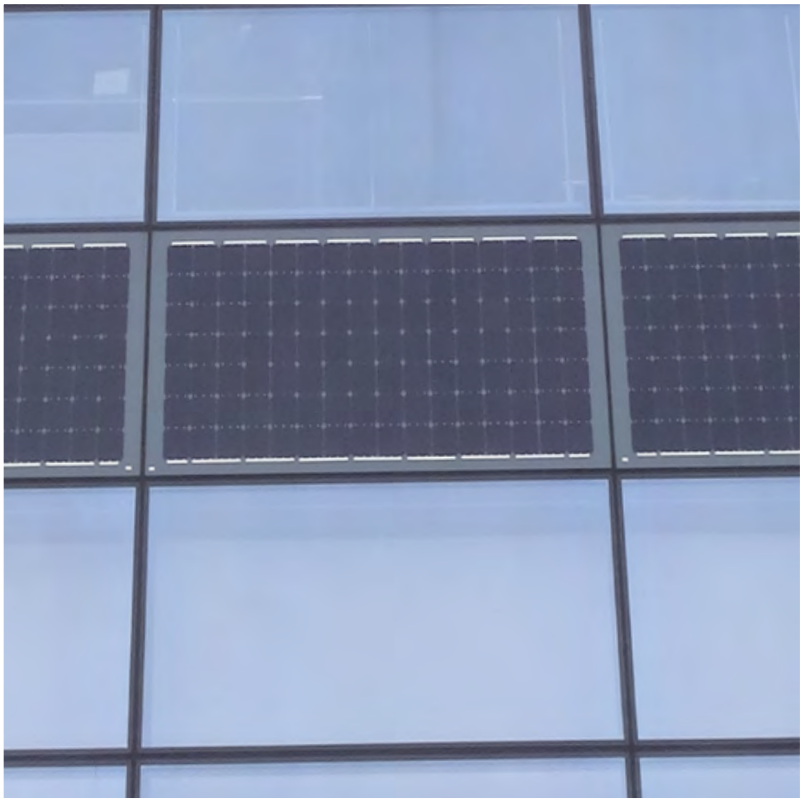
Type of investment:

New construction

BIPV installation:

Surface: 120 m²

Power output: 15 kWp



The new office building of the Regional Fund for Environmental Protection and Water Management is located in Łódź, a city historically known for its textile industry. This modern structure features a glazed entrance façade with a gently inclined design that welcomes visitors. The side elevations are shielded with openwork spatial frameworks made of steel and wood. The front façade is built with an aluminum structure filled with glass and photovoltaic elements. Both glass and PV panels are mounted using structural silicone, creating a perfectly flat surface. The BIPV glass modules, generating electricity, are seamlessly integrated into the opaque sections of the façade, forming an energy-active photovoltaic spandrel.

ML System products:

BIPV curtain wall spandrels
– opaque glass-glass modules

S TOWNHALL OREBRO

Project:
Administrative Building – Municipality of Örebro

Location:
Örebro, Sweden

Design:
Clarus arkitekter AB

Type of investment:
Renovation

BIPV installation:
Surface: 1000 m²
Power output: 150 kWp

ML System products:

BIPV curtain wall spandrels
– opaque glass-glass modules

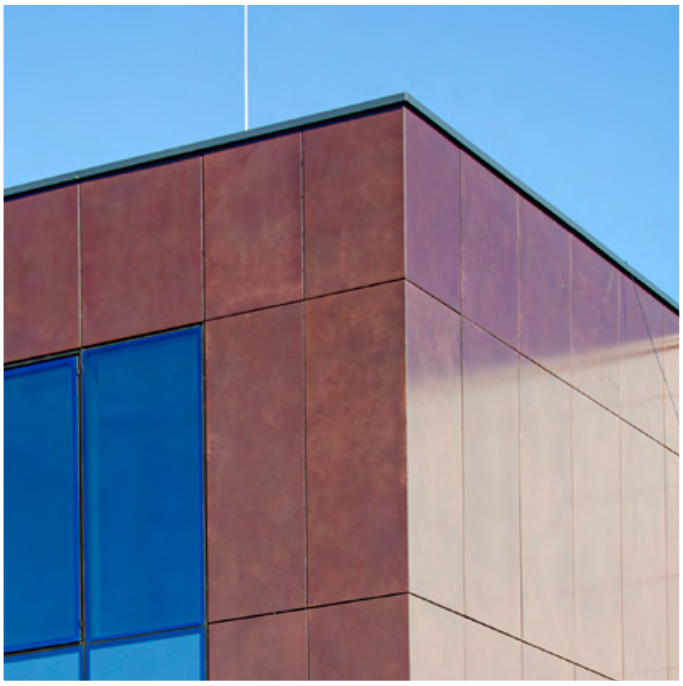
Originally constructed in the 1970s, the Örebro municipal building has recently undergone a comprehensive renovation. A new façade was installed using energy-active BIPV modules in opaque spandrel zones. Ceramic-printed BIPV spandrels were applied to the areas between windows and the parapet strip. The print's color and density were carefully selected to achieve a uniform tone with the monocrystalline cells. In sections of the façade where the use of photovoltaic cells was not feasible, ML System provided insulated glass panels to maintain visual consistency. With BIPV spandrels installed across the eastern, southern, and western façades, the building generates a significant amount of energy. After renovation, Örebro gained a modern, eco-friendly facility whose bluish façade tone creates a welcoming and contemporary appearance.

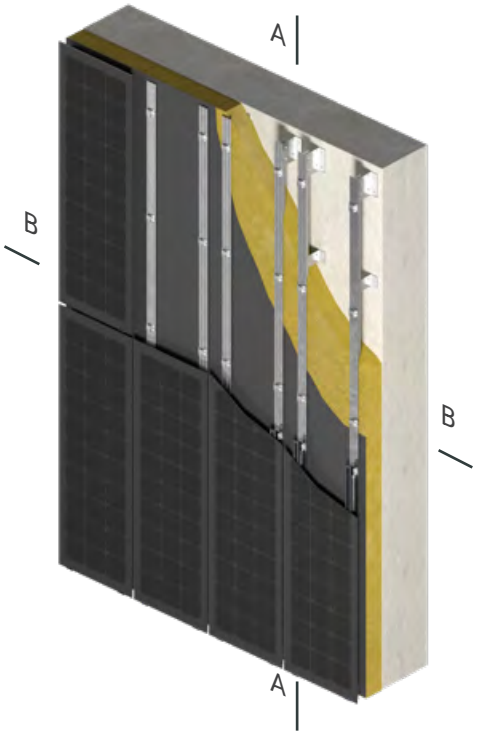
VENTILATED FAÇADES

BIPV

62

Ventilated BIPV façades can utilize nearly the entire surface area of a building's exterior. ML System offers customized photovoltaic façade panel solutions, providing broad dimensional flexibility, a wide range of color options, and the possibility of permanent ceramic printing. These features allow the design to fully meet architectural requirements.




A
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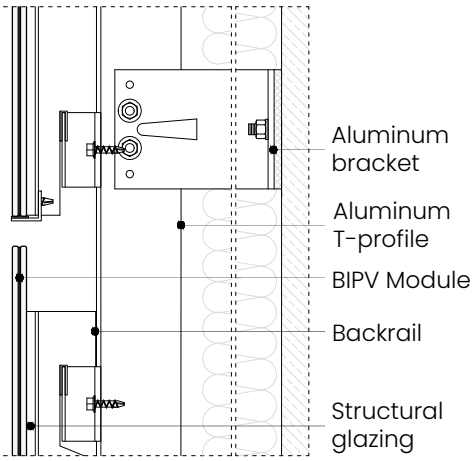
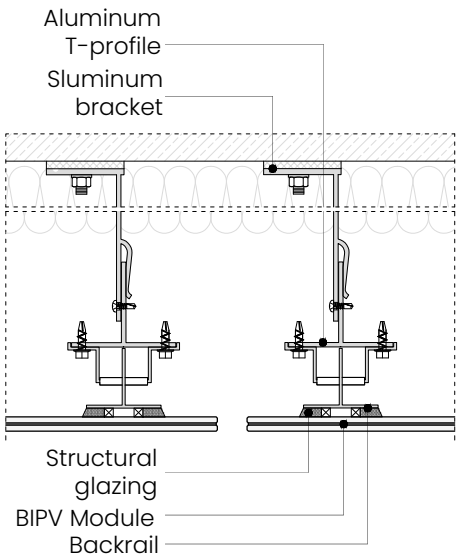
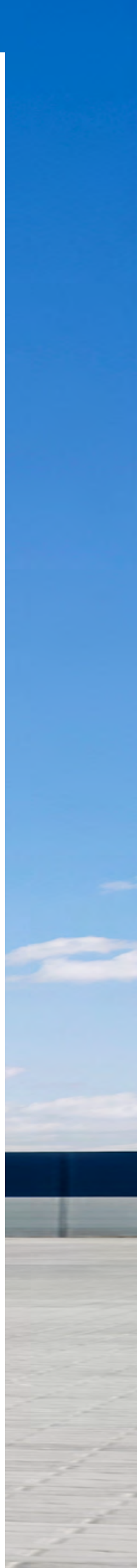
A-A


Aluminum bracket
Aluminum T-profile
BIPV Module
Backrail
Structural glazing

B-B


Aluminum T-profile
Sluminum bracket
Structural glazing
BIPV Module
Backrail



NL

HAUT APARTMENTS AMSTERDAM

Project:
"HAUT" Residential Tower

Location:
Amsterdam, Netherlands

Design:
Team V Architecture

Type of investment:
New construction

BIPV installation:
Surface: 538 m²
Power output: 68,5 kWp

The Haut tower in Amsterdam symbolizes modern, sustainable living. At 73 meters tall, it is the tallest wooden residential structure in the Netherlands. Residents benefit from stunning views of the Amstel River, Stadshaven Amstelkwartier marina, and Somerlust park. Photovoltaic façade cladding is applied in the spaces between windows, generating energy. In addition to solar energy, the building incorporates impressive features such as a CO2-controlled ventilation system powered by wind energy for optimal indoor climate and a rainwater harvesting system for rooftop garden irrigation. Haut Amsterdam has achieved the highest level of BREEAM certification for green building.

ML System products:

Ventilated BIPV façade
– glass-glass modules

PL

C7 AGH TECHNICAL UNIVERSITY KRAKÓW

Project:
C7 Educational Building –
Faculty of Humanities, AGH University
of Science and Technology

Location:
Krakow, Poland

Design:
APA Czech Duliński Wróbel

Type of investment:
New construction

BIPV installation:
Surface: 248 m²
Power output: 28 kWp

The newly constructed C7 building on the AGH University of Science and Technology campus houses the Faculty of Humanities. The building incorporates the latest ecological technologies, with visible photovoltaic elements integrated into the design. The façade, clad in light-colored stone, features large glazed sections that are complemented by custom photovoltaic solutions. A significant portion of the surface is occupied by a ventilated BIPV façade made of dark glass, seamlessly embedded within the stone cladding. The design presented unique challenges due to the building's location—situated on a narrow plot surrounded by existing campus structures. Despite these constraints, the architects successfully ensured sufficient solar exposure for the façade, enabling the implementation of BIPV solutions that now provide tangible energy benefits for the investor.

ML System products:

Ventilated BIPV façade
– glass-glass modules

NO

VEIDEKKE OFFICE OSLO

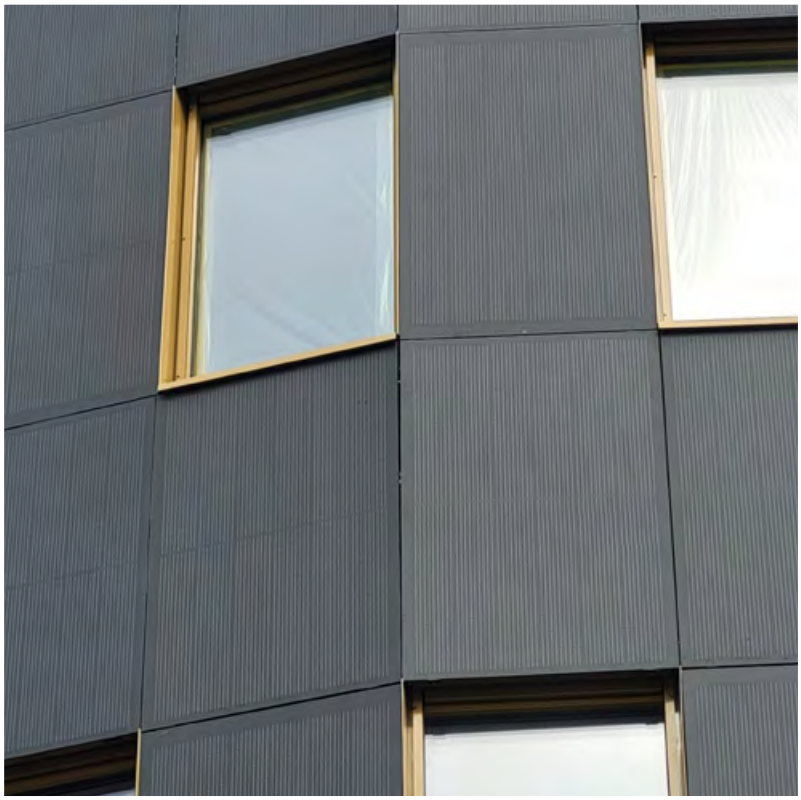
Project:
Veidekke Office Building

Location:
Oslo, Norway

Design:
LPO Arkitekter

Type of investment:
New construction

BIPV installation:
Surface: 1500 m²
Power output: 250 kWp



The new headquarters of Veidekke, Norway's largest general contractor, is located in Oslo. The architects designed a minimalist structure in the spirit of Scandinavian architecture. Cutting-edge technical solutions and an advanced construction process enabled the building to meet the Breeam-NOR Excellent environmental standard. The dark photovoltaic façade contrasts elegantly with natural-colored wooden elements. The ventilated façade is composed of black BIPV modules featuring matte front glass and no visible fasteners. These façade-integrated BIPV modules, along with a rooftop photovoltaic installation, contribute significantly to the building's high ecological performance. The modernist form blends seamlessly into the contemporary architectural landscape of the surrounding buildings.

ML System products:

Ventilated BIPV façade
– glass-glass modules

PL

SKYE OFFICE KIELCE

Project:
SKYE IT Incubator Office Building – Kielce Technology Park

Location:
Kielce, Poland

Design:
Karpla Konsulting

Type of investment:
Modernization

BIPV installation:
Surface: 2573 m²
Power output: 32 kWp

The SKYE building is part of the Kielce Technology Park and hosts a range of business activities, from IT to the design sector. SKYE is a modern glazed office building whose blue-tinted façade features a combination of traditional glazing and innovative, custom-designed glass panels with visible photovoltaic cells. The BIPV solutions are installed as opaque panels on a ventilated façade structure. Exceptional attention to architectural detail is evident—vertical stainless steel accents and the visual effect created by the glass BIPV modules contribute to the building's striking appearance. Altogether, it stands as a powerful example of merging advanced technology with environmental responsibility.

ML System products:

Ventilated BIPV façade
– glass-glass modules

DE

IGH OFFICE BONN

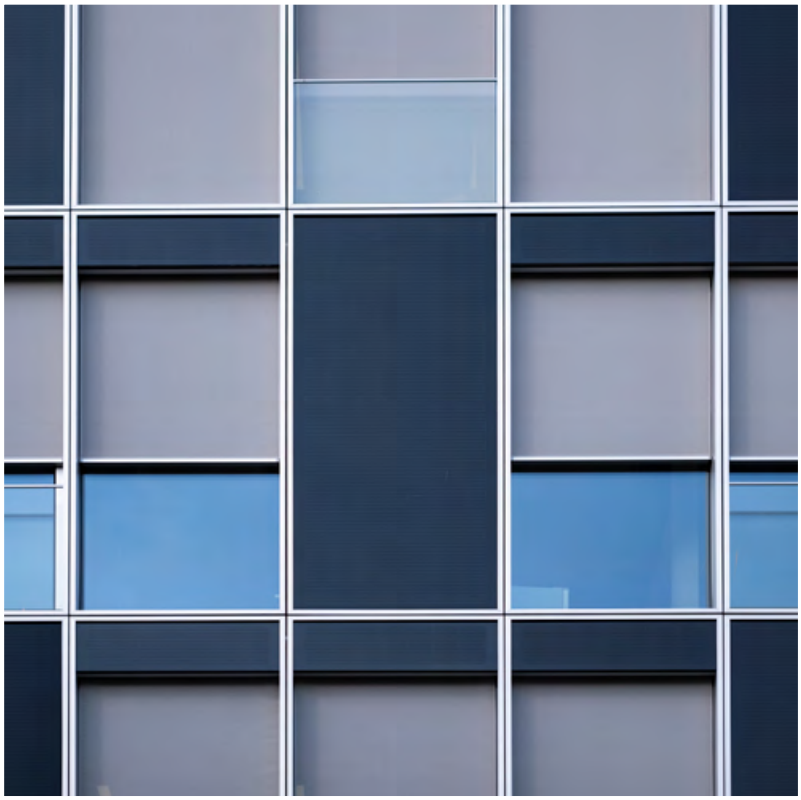
Project:
Innovation Green House
Office Building

Location:
Bonn, Germany

Design:
GPG Architekur

Type of investment:
New construction

BIPV installation:
Surface: 470 m²
Power output: 62,4 kWp



Innovation Green House in Bonn is a distinctive triangular-shaped building. The property offers approximately 2,900 m² of modern office space and 400 m² of dining area, connected by a green atrium with spiral staircases. The investor, Bonn Visio Group, is committed to sustainable construction, implementing projects in line with DGNB and NH Efficiency House 40 certifications. A top priority for the investor is the use of renewable energy solutions (RES) to reduce operating costs—an especially important factor in times of rising energy prices. The building benefits from renewable energy thanks to its photovoltaic glass roof and BIPV ventilated façade modules. The photovoltaic system, combined with heat pumps, creates a sustainable and environmentally friendly energy supply system for the project.

ML System products:

Ventilated BIPV façade – glass-glass modules
BIPV roof glazing – transparent glass -glass modules

PL

MOON OFFICE KRAKÓW

Project:
Moon Office Building

Location:
Krakow, Poland

Design:
ION Architekci

Type of investment:
New construction

BIPV installation:
Powierzchnia : 124 m^2
Power output: 18 kWp

Moon Office is located in a prime area of Krakow, near Wawel Castle and the bend of the Vistula River. The building combines modern aesthetics with ecological responsibility. Its elegant and understated façade features window bands accented by vertical white louver elements. Custom-designed BIPV modules were installed within these window zones, mounted on a ventilated façade structure. Carefully detailed connections and the dark glass surface of the modules give the appearance of a refined architectural cladding. The photovoltaic system not only reflects a commitment to sustainability but also reduces the building's operational costs. Renewable energy produced on-site is used by employees and visitors, for example, to charge electric vehicles.

ML System products:

Ventilated BIPV façade
– glass-glass modules

SE

MOSAIC GETEBORG

Project:
Multifamily Residential Building

Location:
Gothenburg, Sweden

Design:
AFRY

Type of investment:
Renovation

BIPV installation:
Surface: 150 m²
Power output: 7 kWp

Due to the deteriorating technical condition of the building in Gothenburg, residents decided to undertake its renovation. Particular attention was given to the windowless side façade. The project was carried out by AFRY, a studio known for integrating sustainable solutions into its designs. In this case, the side façade was transformed into a colorful mural inspired by Moroccan patterns and hues, which also serves as a source of renewable energy. The color scheme of the BIPV façade modules was approved by the architects, residents, and the municipal heritage conservator. As a result, a vibrant and functional photovoltaic mural now enhances the urban landscape while generating clean energy.

ML System products:

Ventilated BIPV façade
– glass-glass modules

PL

SHOPPING CENTER OŁAWA

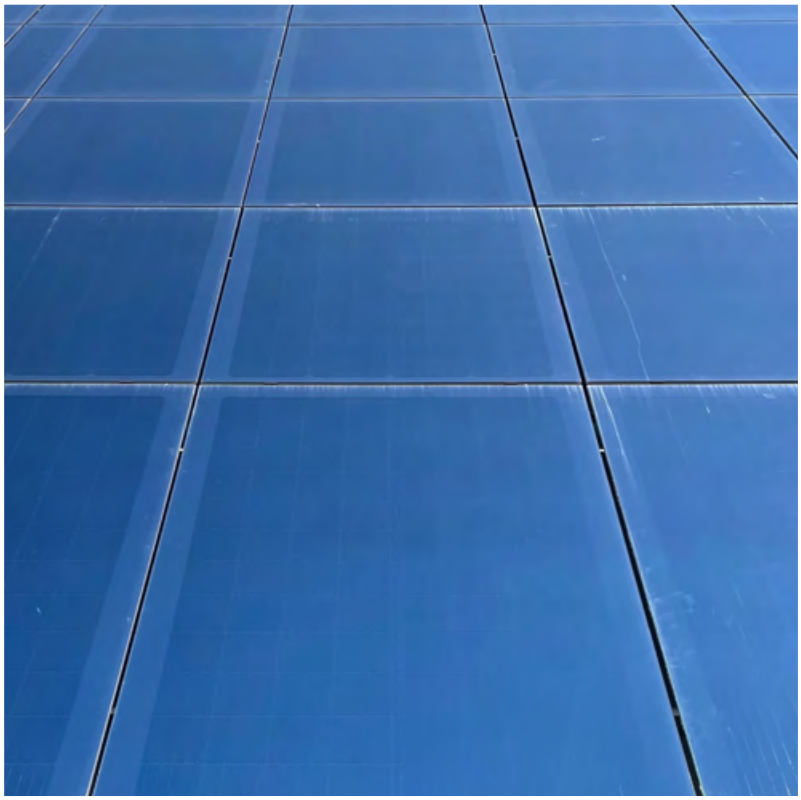
Project:
Oława Shopping Center

Location:
Oława, Poland

Technical design:
ML System

Type of investment:
Expansion

BIPV installation:
Surface: 809 m²
Power output: 32 kWp



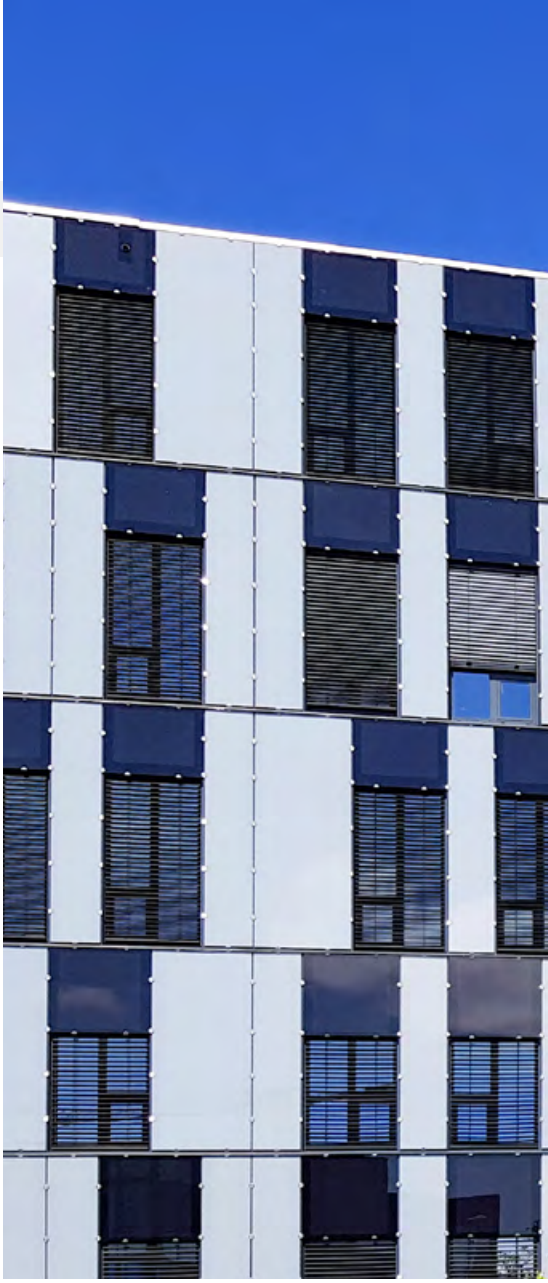
Oława mall stands out from typical shopping centers with its progressive design and sustainability focus. Thanks to the investor's vision, the gallery features photovoltaic solutions, with a large part of the façade used for a ventilated BIPV system. Custom BIPV modules have specialized exterior glass whose color and reflectivity harmonize with the main curved façade. Despite its size, the reflective BIPV façade doesn't overwhelm the building; reflections of the sky and surroundings add spatial depth. The Galeria Oławska project is a prime example of using large vertical surfaces to integrate BIPV technology, generating clean energy while enhancing the building's architectural identity.

ML System products:

Ventilated BIPV façade
– glass-glass modules

NO

NORWEGIAN PETROLEUM STAVANGER



Project:
Norwegian Petroleum Directorate
Office Building

Location:
Stavanger, Norway

Design:
Entra Eindom

Type of investment:
Renovation

BIPV installation:
Surface: 1000 m²
Power output: 85 kWp

The headquarters of the Norwegian Petroleum Directorate in Stavanger originally featured a glass façade, which over time had significantly deteriorated, posing safety concerns. In response, the company decided to replace the building's external façade elements. The new façade not only restored the building's structural integrity but also added an important ecological factor. The energy-active façade consists of custom-designed and manufactured ventilated BIPV panels. The renovation transformed the building into a modern facility that visibly reflects the investor's commitment to environmental sustainability. Due to the building's geographic location, the façade generates more energy than initially anticipated. This is attributed to the cooler climate, optimal sun angles, and the absence of snow accumulation on the modules.

ML System products:

Ventilated BIPV façade
– glass-glass modules

PL

BRYNÓW OFFICE CENTER KATOWICE

Project:
Brynów Center – Laboratory and Office Building

Location:
Katowice, Poland

Design:
arch. Arkadiusz Hołda,
arch. Marek Skwara,
arch. Mirosław Polak,
arch. Grzegorz Grys

Type of investment:
New construction

BIPV installation:
Surface: 240 m²
Power output: 21 kWp

Brynów Center is located in the Brynów district of Katowice and functions as a hub for research and development activities. It serves as a site for technology transfer from academia to business and for the implementation of innovations in energy, robotics, construction, and electronics. The project was initiated by the Katowice University of Technology. Since 2014, it has hosted the Smart Energy Networks project, including a building-integrated energy management system. The building incorporates photovoltaic technologies, including a ventilated BIPV façade. The façade features black glass modules that conceal the photovoltaic cells, creating a sleek and modern appearance. The dark glass surface, contrasted with bright yellow cladding, forms a bold architectural accent on the building's exterior.

ML System products:

Ventilated BIPV façade
– glass-glass modules

IT

TECNOIMPIANTI COMPANY VERONA

Project:
Tecnoimpianti Office and Commercial Building

Location:
Verona, Italy

Technical design:
ML System

Type of investment:
New construction

BIPV installation:
Surface: 150 m²
Power output: 24 kWp

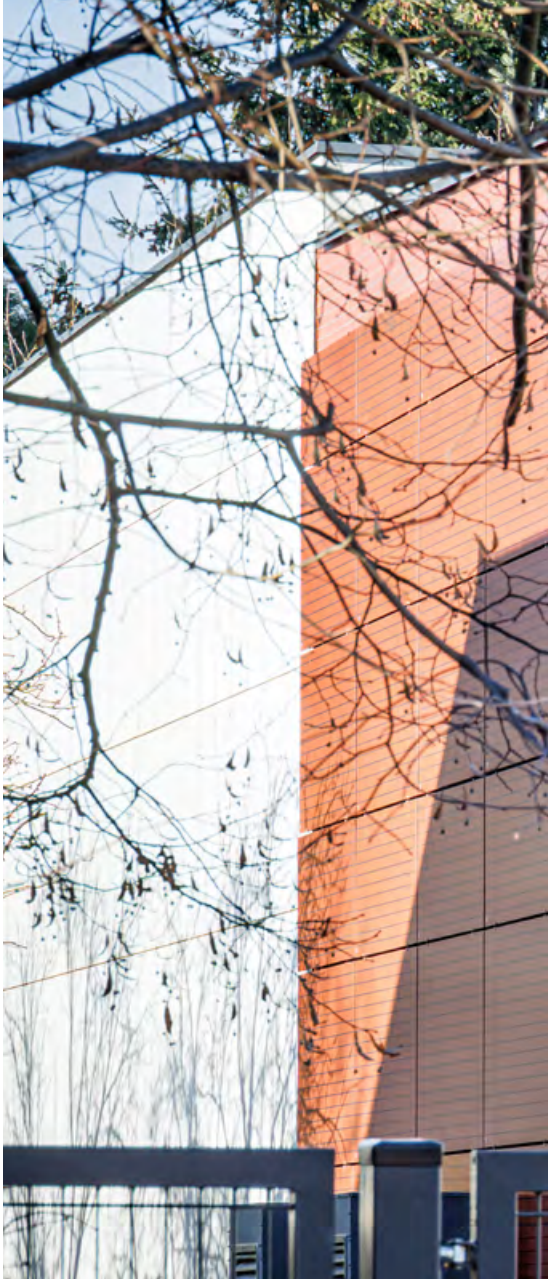
The new headquarters of Technopianti is located in the culturally renowned city of Verona, Italy. The building serves both office and commercial functions, was created based on investor's commitment to sustainability. The entire façade of the building has been designed as an energy-generating surface, incorporating a ventilated BIPV system. The façade, made of dark glass, consists of several planes tilted at various angles, adding dynamic visual interest. Above it extends a prominent wooden canopy, constructed from timber beams, which enhances the architectural contrast and references the region's traditional aesthetic. This project represents a successful fusion of Verona's cultural heritage with cutting-edge photovoltaic technology.

ML System products:

Ventilated BIPV façade
– glass-glass modules

PL

MUSIC EDUCATION CENTER KATOWICE



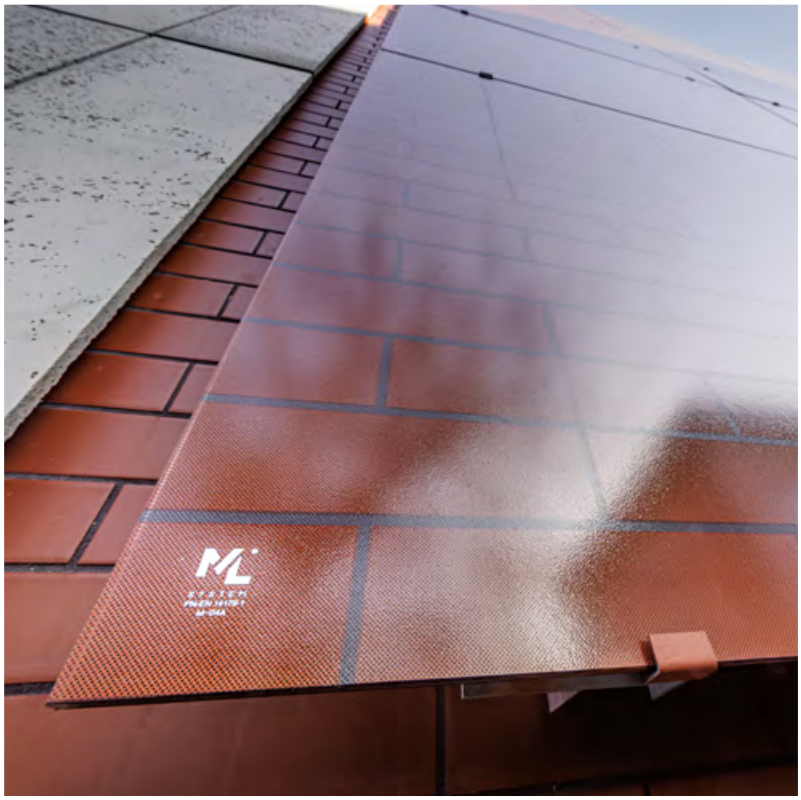
Project:
Music Education Center “Dom Kilara”

Location:
Katowice, Poland

Technical design:
ML System

Type of investment:
Expansion

BIPV installation:
Surface: 56 m²
Power output: 4 kWp



The Music Education Center “Dom Kilara” was established at the site where renowned composer Wojciech Kilar lived and created his work. The center fulfills a dual function: a museum preserving the original furnishings of the composer’s home, and an educational space housed in a newly constructed wing. The new wing features multimedia exhibitions, concerts, and seminars. Its modern design is closely aligned with ecological values, incorporating a wide array of renewable energy solutions. The photovoltaic system includes rooftop modules, BIPV roof glazing, and a ventilated BIPV façade. The ventilated façade is made of photovoltaic glass panels printed with a brick-like pattern. This approach allows the façade to harness solar energy while visually referencing traditional building materials, blending modern technology with cultural heritage.

ML System products:

Ventilated BIPV façade
– glass-glass modules

DE

VONOVIA APARTMENTS WITTEN

Project:
Vonovia Residential Buildings

Location:
Witten, Germany

Design:
Vonovia

Type of investment:
Renovation

BIPV installation:
Surface: 1370 m²
Power output: 217 kWp

Vonovia owns approximately 500,000 residential units, mostly located in Germany, small part in Sweden - 40,000 and 20,000 in Austria. All properties are undergoing continuous eco-conscious upgrades. Comprehensive renovations are being carried out to improve energy efficiency and promote environmental responsibility. The buildings are being equipped with technologies that support sustainable mobility and energy management. A key priority for Vonovia is ensuring the well-being of residents while reducing environmental impact. A prime example of this commitment is the renovation of multifamily residential buildings in Witten. The implementation of a ventilated BIPV façade system not only enhanced the buildings' architectural aesthetics but, more importantly, significantly reduced their operational costs.

ML System products:

Ventilated BIPV façade
– glass-glass modules

SE

HOTEL HOUSE OF CHOICE STOCKHOLM

Net-Zero
Energy Building

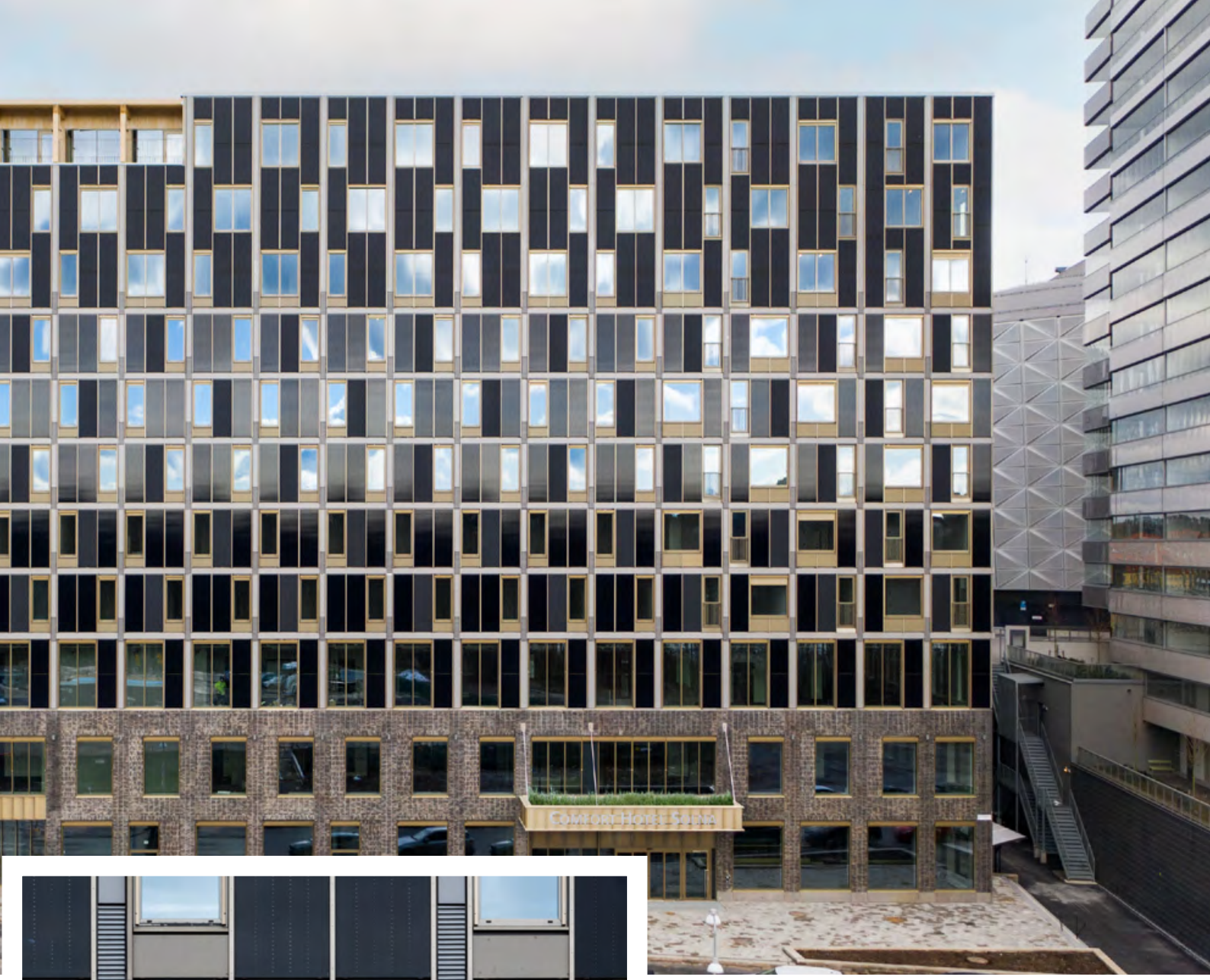
Project:
House of Choice Hotel Building

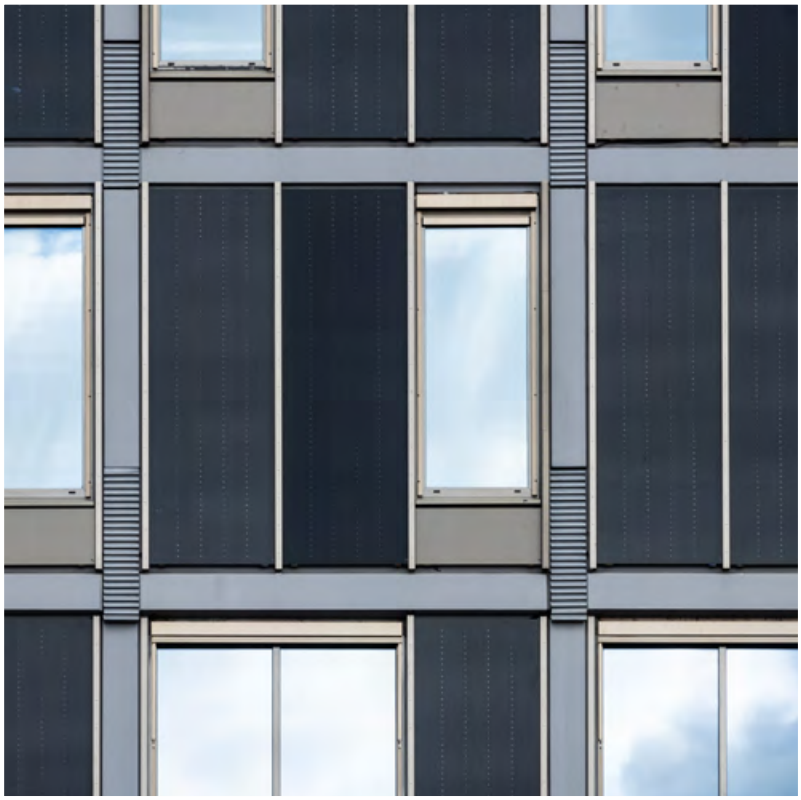
Location:
Stockholm, Sweden

Design:
White Arkitekter

Type of investment:
New construction

BIPV installation:
Surface: 820 m²
Power output: 150 kWp





The House of Choice Hotel is located in Stockholm and features a rectangular architectural form enhanced by a dynamic façade layout. The lower floors are built with traditional brick, while the upper stories are clad in a variety of colored façade materials. The architects designed a visually rich arrangement of glass photovoltaic modules—featuring 60 different sizes and 5 types of glass. The overall composition creates a harmonious blend of modern design and Scandinavian tradition. The solar cells installed in the hotel generate enough electricity to power an electric car for over 40 trips around the Earth. As a result, the building is considered the most photovoltaic-integrated hotel in the world, achieving net-zero energy consumption. The hotel holds a BREEAM Excellent classification and has recently been awarded the FEBY Guld Plushus.

ML System products:

Ventilated BIPV façade
– glass-glass modules

PL

PSG COMPANY KRAKÓW

Project:
Office Building – Polska Spółka Gazownictwa (PSG)

Location:
Krakow, Poland

Technical design:
ML System

Type of investment:
New construction

BIPV installation:
Surface: 204 m²
Power output: 27 kWp

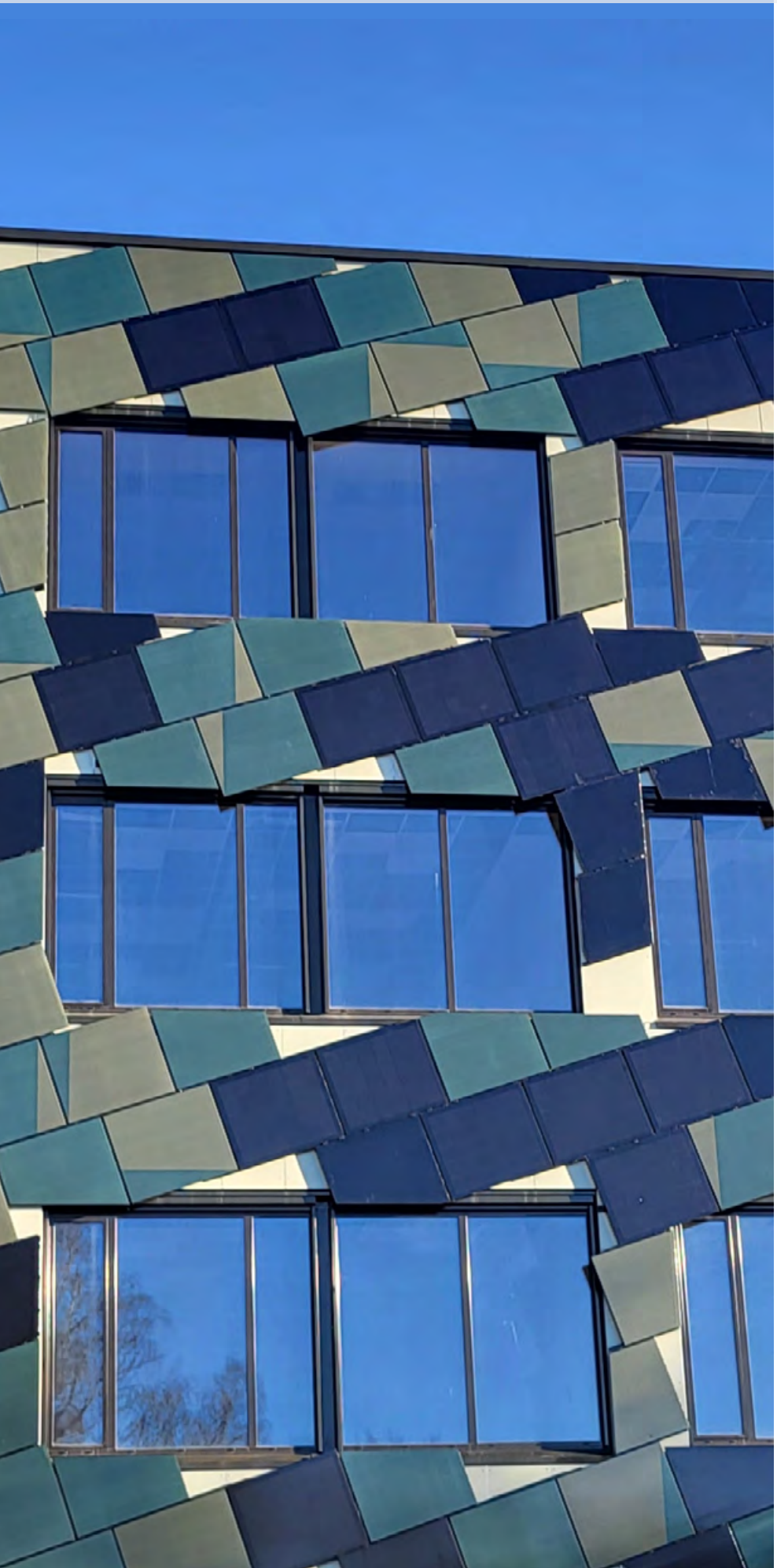
Polish Gas Company (PSG) is the Gas Distribution System Operator in Poland. The company's key role is to ensure the reliable and safe transportation of gaseous fuels through its distribution network across the country—directly to end users and other local network operators. One of the company's regional branches is located on Bagrowa Street in Krakow. The building underwent a comprehensive renovation that included thermal upgrades and the installation of a photovoltaic façade. The BIPV modules were installed on an aluminum substructure, utilizing the entire surface area of the building's southern wall for energy generation.

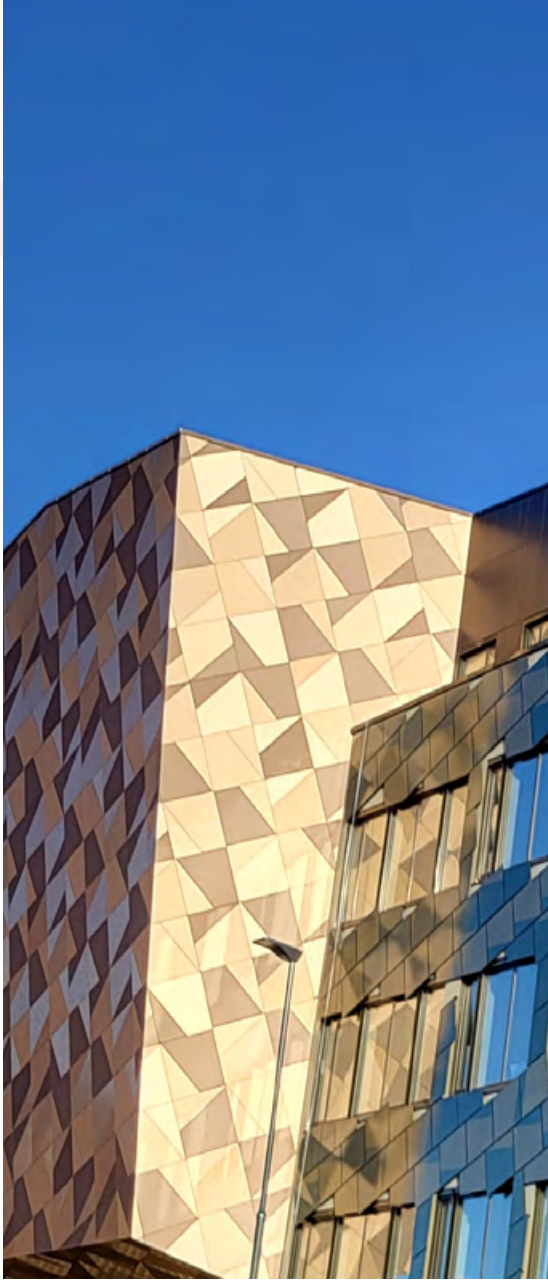
ML System products:

Ventilated BIPV façade
– glass-glass modules

NO

VOLDSLOKKA SCHOOL OSLO





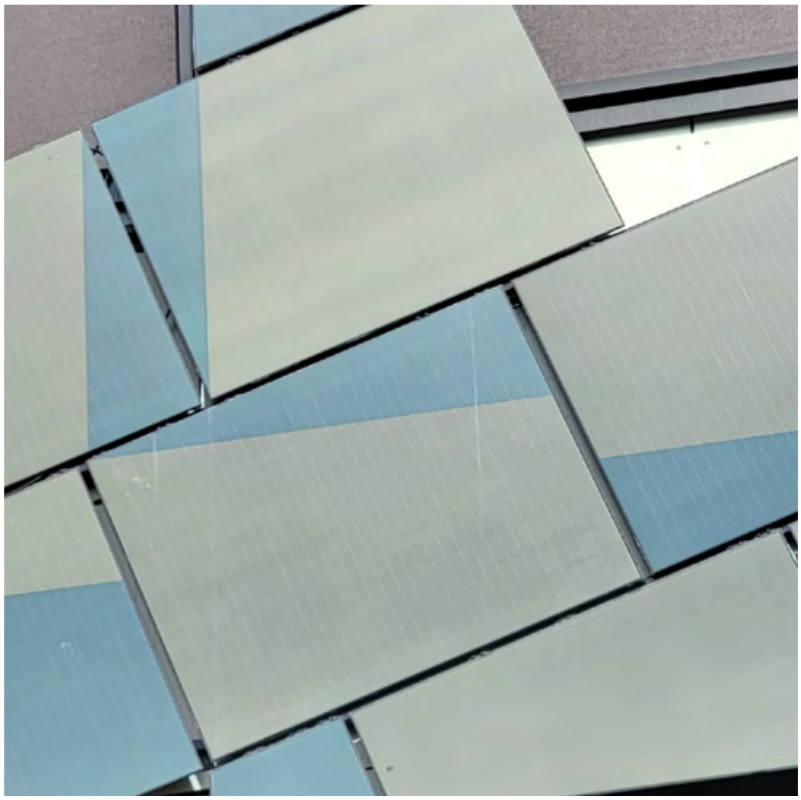
Project:
Voldslokka School

Location:
Oslo, Norway

Design:
Spin Arkitekter
Kontur Arkitekter

Type of investment:
Renovation

BIPV installation:
Surface: 1100 m²
Power output: 65 kWp



The Voldslokka Primary School building in Oslo underwent a comprehensive renovation. The existing school structure was expanded with a strong emphasis on solar energy utilization. The aim was to design a photovoltaic system integrated into the roof and façade, capable of generating 230,000 kWh annually. The architects determined that an inclined façade would offer the highest efficiency; therefore, multicolored panels were installed at a 20-degree angle. The ventilated façades—east, west, and south—were clad with BIPV panels, which also included visually coordinated inactive elements to ensure aesthetic cohesion across the entire façade. The façade evokes a camouflage effect, achieved through a varied color palette and the irregular shapes of the BIPV modules.

ML System products:

Ventilated BIPV façade
using glass/glass technology modules

PL

H6 ZACZERNIE

Project:
Production and Office Building
H6 – ML System

Location:
Zaczernie, Poland

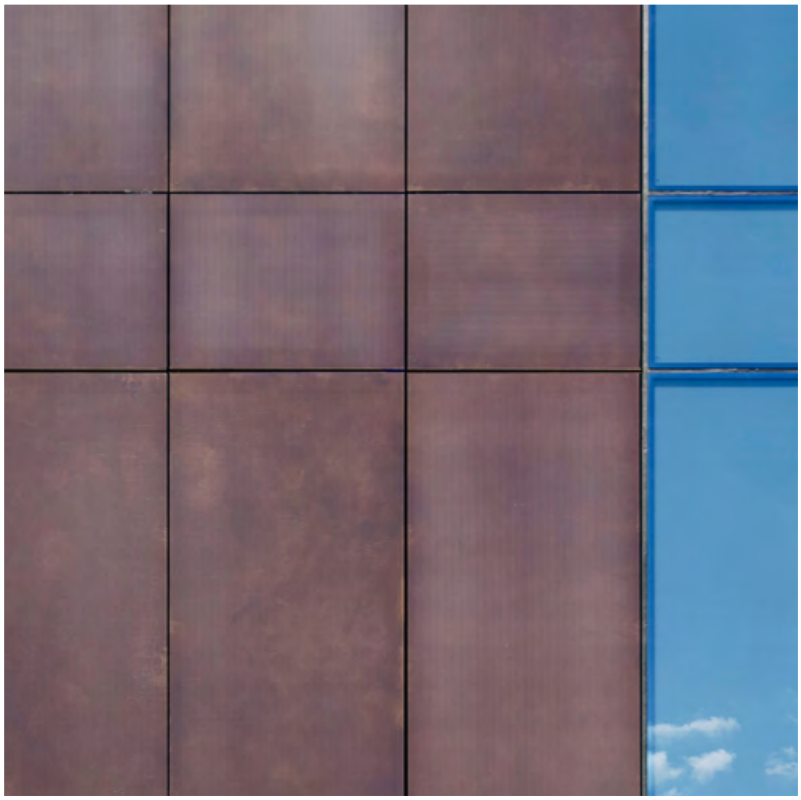
Technical design:
ML System

Type of investment:
New construction

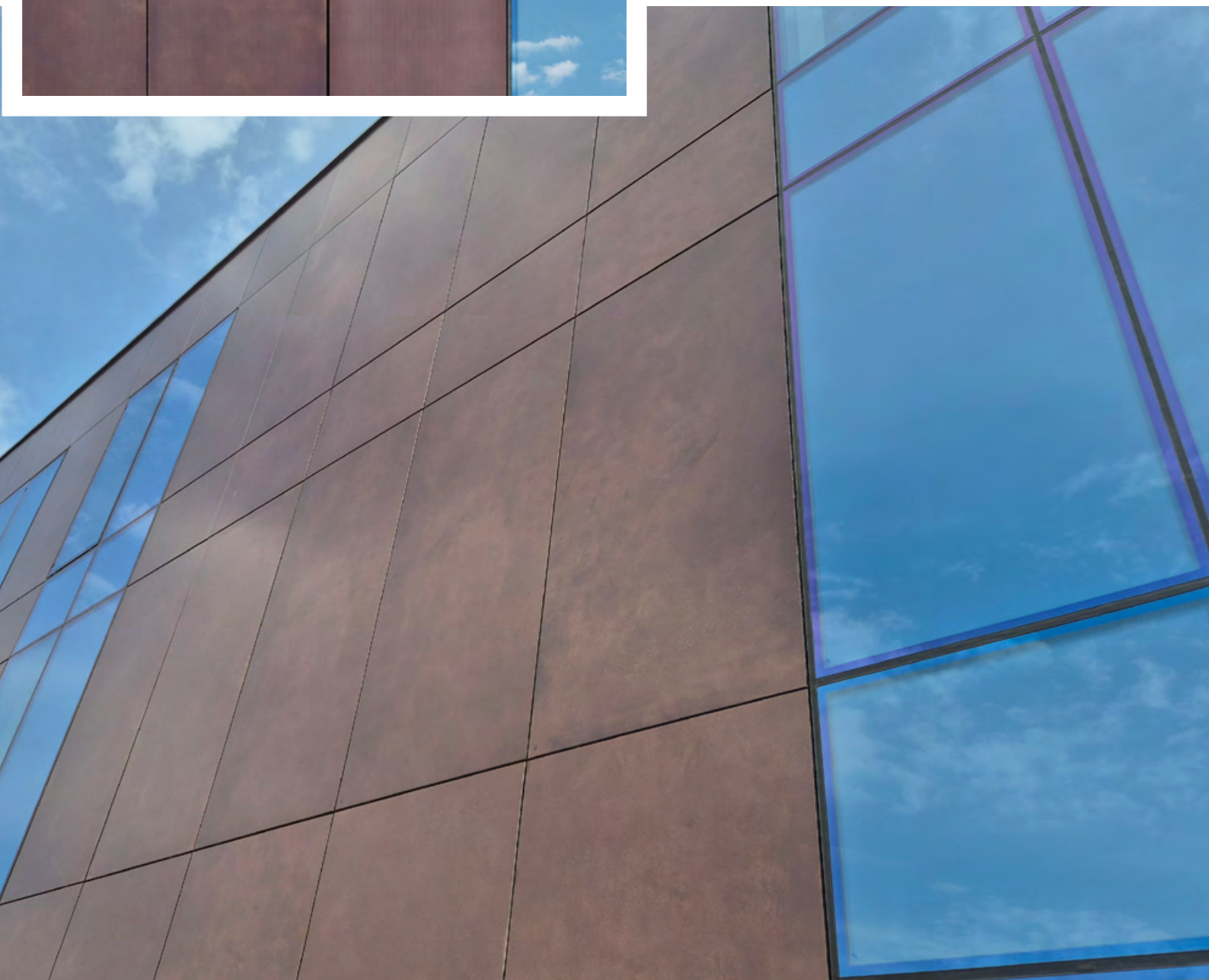
BIPV installation:
Surface: 283 m²
Power output: 16,1 kWp

ML System products:

Ventilated BIPV façade
with glass/glass technology modules



The H6 production and office building was constructed in Zaczernie near Rzeszów and became part of the ML System building complex. The production and office facilities within the complex cover a total area exceeding 40,000 m². The H6 hall alone comprises nearly 19,000 m². The production section of the building houses glass processing and manufacturing lines. The structure, characterized by a horizontal form, is equipped with BIPV solutions. A photovoltaic ventilated façade was implemented using glass modules in a rusty hue, visually referencing corten steel sheet surfaces. The ventilated façade seamlessly integrates with the glass structural surface of the curtain wall. The building's flat façade is enriched with windows that, when opened, extend outward from the structure.

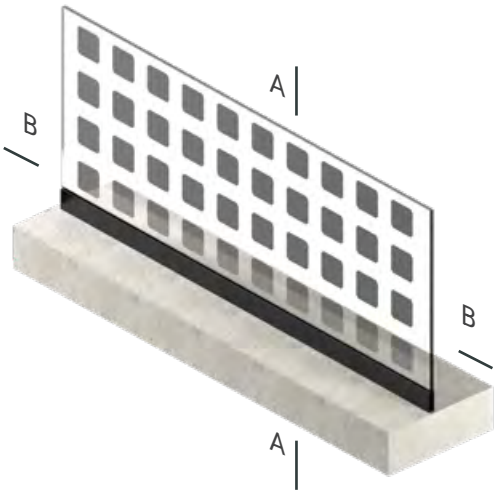


BALUSTRADES

BIPV

98

BIPV balustrades
provide photovoltaic functionality to a commonly used architectural solution found in nearly every building.
ML System's glazed balustrades meet the structural requirements of any design. The available glass color options and ceramic printing offer extensive aesthetic possibilities.



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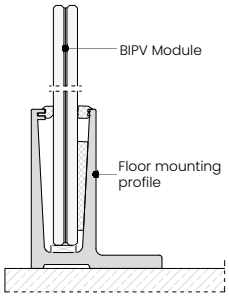

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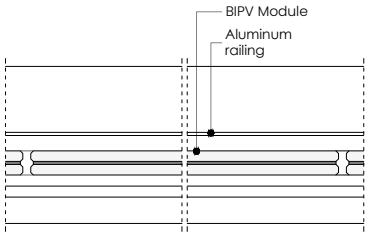
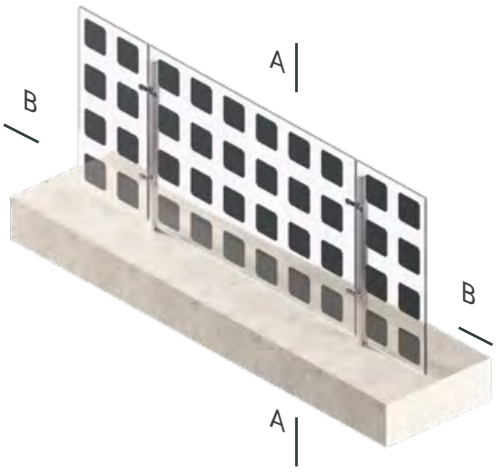


SELF-SUPPORTING BALUSTRADE



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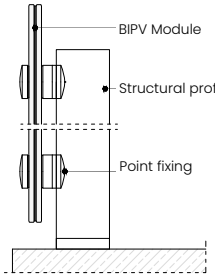

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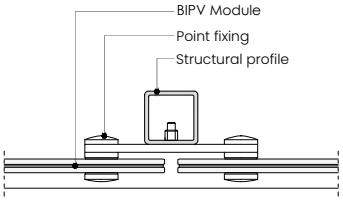
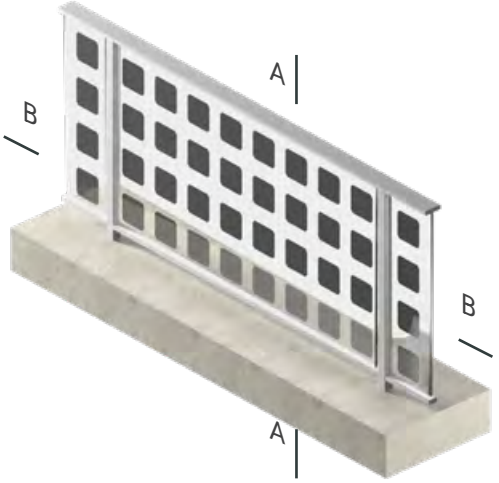


POINT-MOUNTED BALUSTRADE



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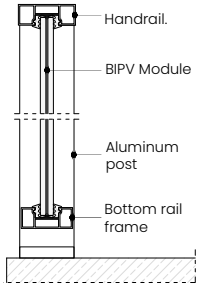

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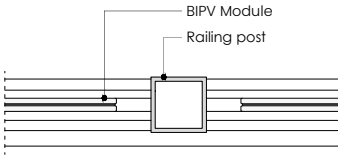
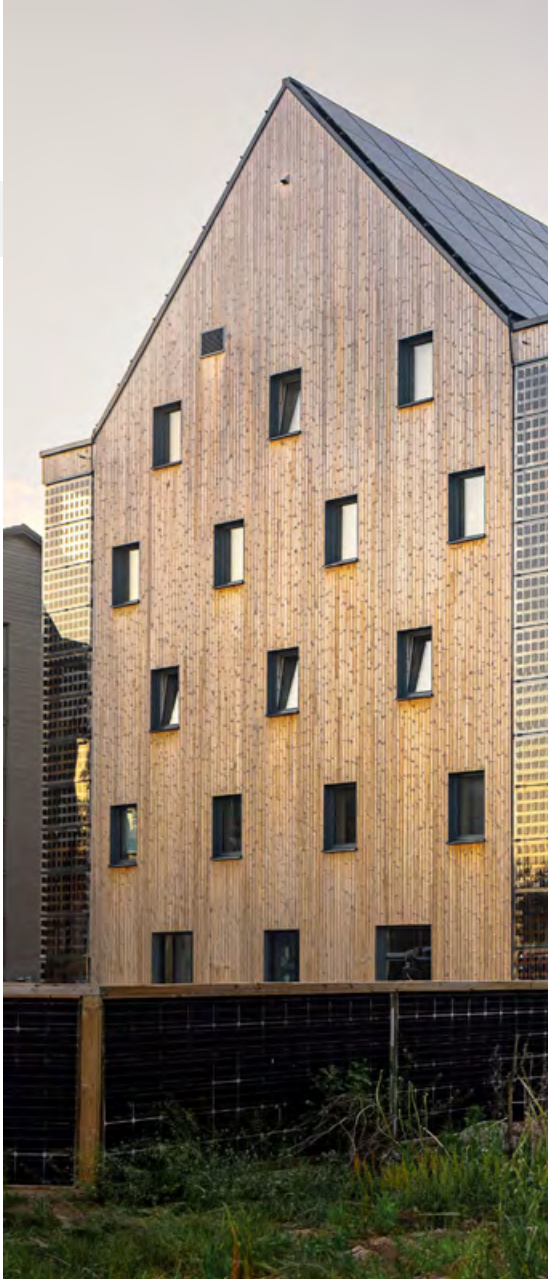


BALUSTRADE WITH HANDRAIL

S

PROPIO HOUSE VAXJO



Project:
Residential Building
– Propio House

Location:
Växjö, Sweden

Design:
ETC Bygg

Type of investment:
New construction

BIPV installation:
Surface: 700 m²
Power output: 100kWp

The multi-family residential building in Växjö, Sweden, serves as a social housing facility. Both the building and its surroundings are characterized by environmentally friendly and resident-focused solutions. The complex incorporates various photovoltaic systems, including a rooftop PV system, BIPV balustrades, a BIPV façade, and a BIPV fence. The building blends harmoniously with the Scandinavian climate, combining the use of natural materials with renewable energy technologies. The load-bearing structure and walls are entirely made of laminated timber, resulting in an exceptionally low carbon footprint. By consciously investing in BIPV solutions, the Municipality of Växjö gains measurable benefits in the form of reduced operational costs for social housing.

ML System products:

BIPV Balustrade with semi-transparent modules in glass-glass technology

PL

DLJM OFFICE KRAKÓW

Project:
Office Building
– DLJM

Location:
Krakow, Poland

Technical design:
ML System

Type of investment:
New construction

BIPV installation:
Surface: 21 m²
Power output: 2,5 kWp

The new DLJM System office building was constructed on Balicka Street in Krakow. DLJM specializes in building automation system integration. Considering the company's field of activity, the application of cutting-edge photovoltaic technology in its new headquarters was a natural choice. Glass BIPV modules form the rooftop balustrade surface. The building's technical façade—featuring dark lamellas and an extensive antenna installation—is topped with a photovoltaic balustrade strip. The balustrade modules, made of transparent tempered glass, include visible photovoltaic cells that integrate seamlessly with the façade's color scheme.

ML System products:

BIPV Balustrade with semi-transparent modules in glass-glass technology

EST

WHITE HOUSE TALLIN

Project:
Residential Building
– White House,

Location:
Tallinn, Estonia

Design:
Innore

Type of investment:
Renovation

BIPV installation:
Surface: 60 m²
Power output: 6 kWp

The White House is located in the suburbs of Tallinn, the capital of Estonia. Following renovation, the building features white façades and photovoltaic balustrades that are harmoniously integrated with the overall design. Both the balustrade structure and its infill are white, an effect achieved through the application of printed glass technology in the photovoltaic modules. The building's minimalist character and monochromatic color palette are complemented by a terrace finished in natural wood tones, adding a warm contrast to the clean architectural lines.

ML System products:

BIPV Balustrade
with opaque modules in glass-glass technology

SE

CELSIUS LABORATORY UPPSALA

Project:
Scientific Building – Celsius

Location:
Uppsala, Sweden

Design:
White Arkitekter

Type of investment:
Renovation

BIPV installation:
Surface: 250 m^2
Power output: 21 kWp

ML System products:

BIPV Balustrade
with opaque modules in glass-glass technology

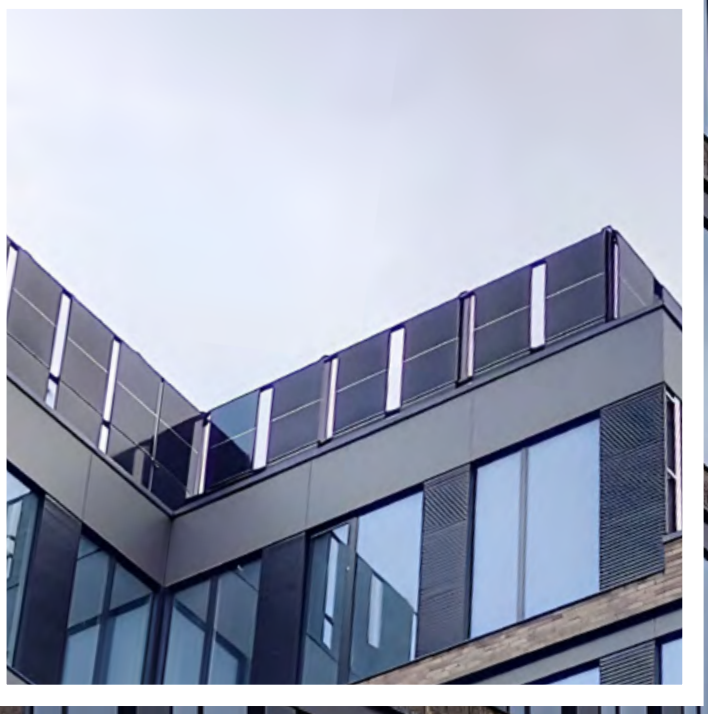
The Celsius building is a modern office and laboratory facility spanning 10,000 m², located in the Uppsala Science Park. It stands out with its bold design—featuring a rust-red façade and rugged concrete elements. Emphasizing sustainability, photovoltaic solutions were integrated into the project. Balustrades made of matte black glass were installed in the upper sections of the building. These panels conceal the photovoltaic cells without compromising performance. The balustrades are placed on all elevations, blending seamlessly with the architectural form. On the northern side, inactive glass modules were used to mimic the appearance of PV panels. The building meets the LEED Platinum energy efficiency standard.

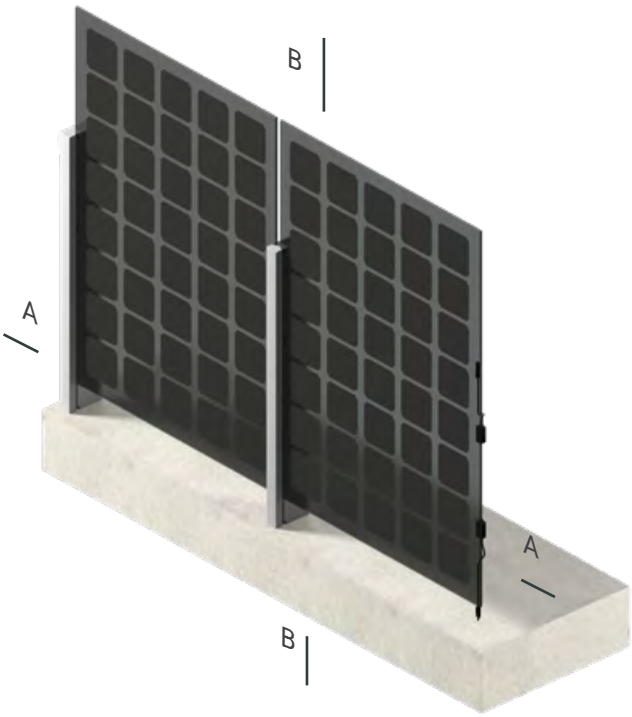
ATTIC WALLS

BIPV

108

BIPV Attic Wall
provide additional surface area for photovoltaic installation. Modern buildings are often equipped with parapets that conceal the extensive technical infrastructure located on rooftops. ML System's photovoltaic elements can be customized to fit the supporting structure and are available in a wide range of colors.





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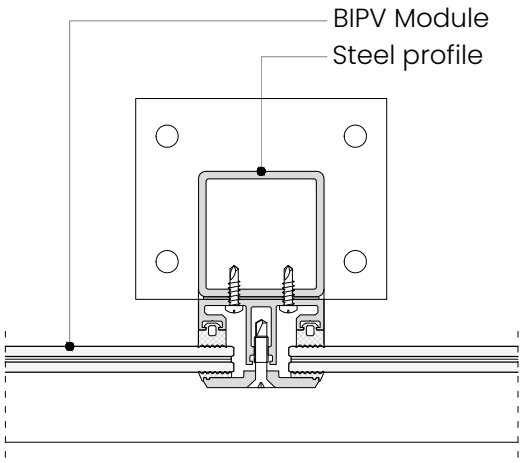

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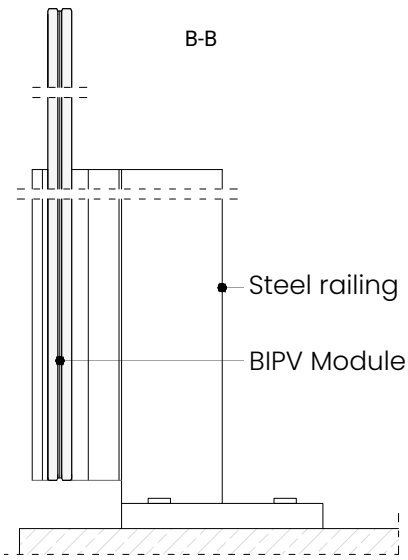


NO

SINTEF OFFICE OSLO

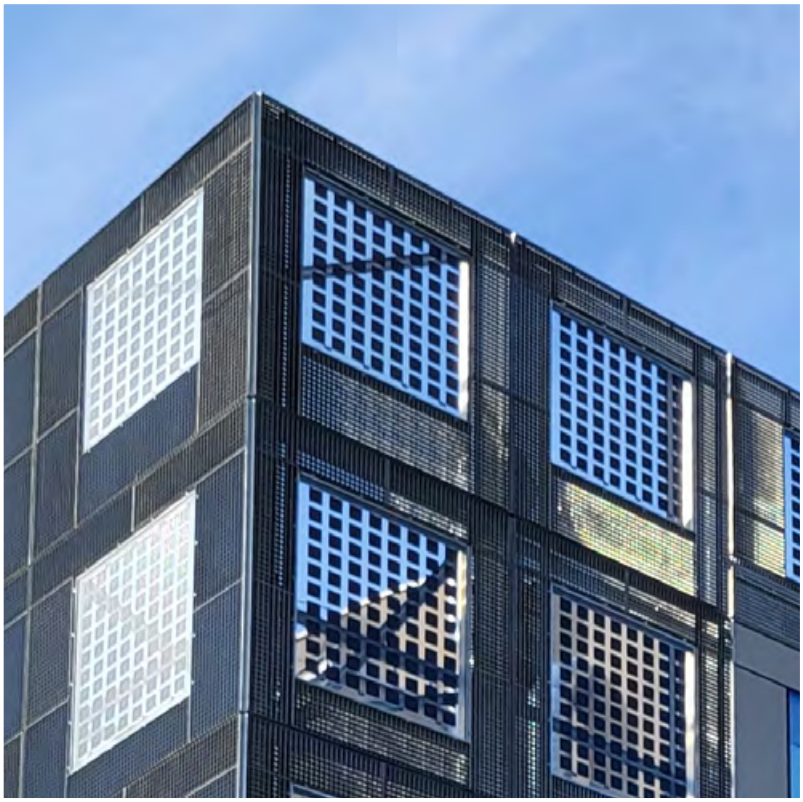
Project:
Laboratory and Research Building – Sintef

Location:
Oslo, Norway

Design:
Element Arkitekter

Type of investment:
Renovation

BIPV installation:
Surface: 1 000 m²
Power output: 105 kWp



The renovation of the Sintef scientific complex in Oslo is a multi-stage process. A key phase included modernizing the façades of the laboratory building. Besides structural renovations and component replacements, the main goal was to achieve a passive energy standard. A crucial design choice was integrating building-integrated photovoltaics (BIPV) into the façade elements and photovoltaic parapets. Glass-glass BIPV modules were seamlessly incorporated into the unitized façade, while parapets extended beyond the building's perimeter to protect the rooftop. Positioned strategically, the modules use bifacial solar cells to maximize sunlight exposure and enable energy production throughout the day.

ML System products:

BIPV Attic Wall with semi-transparent glass/glass modules featuring bifacial cells

PL

WSPIA EDUCATION BUILDING RZESZÓW

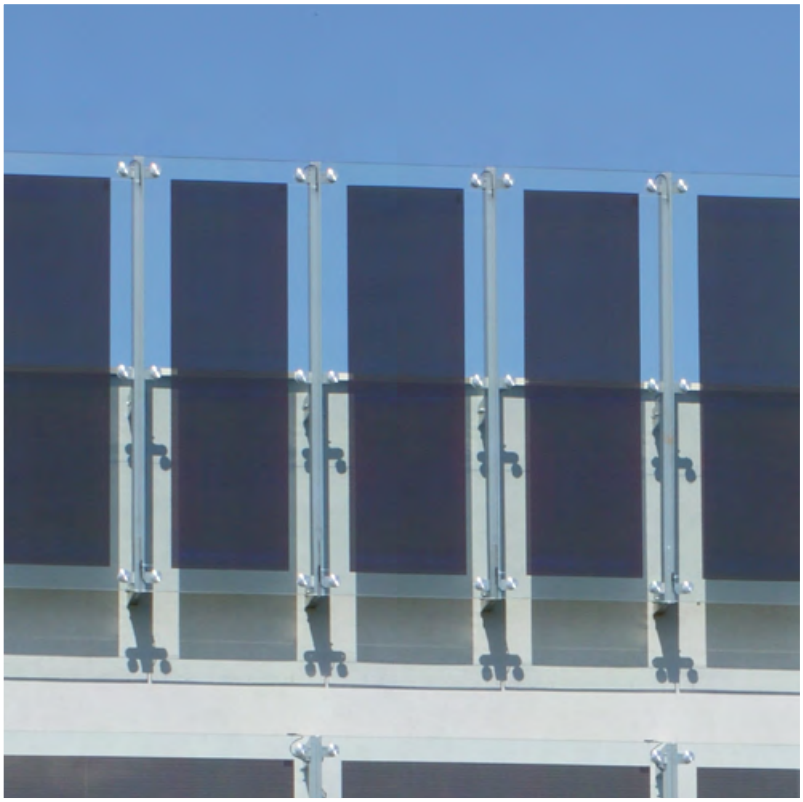
Project:
Educational Building – University of Law and Administration (WSPiA)

Location:
Rzeszów, Poland

Technical design:
ML System

Type of investment:
Renovation

BIPV installation:
Surface: 32 m²
Power output: 2,1 kWp



WSPiA University of Law and Administration in Rzeszów is the oldest non-public university in the Podkarpacie region. From its inception, the institution's administration has sought solutions that provide operational savings and emphasize sustainability. In addition to conventional photovoltaic systems, the university campus includes building-integrated photovoltaic (BIPV) systems. Notable features include photovoltaic lighting and parking shelters covered with active modules. A particularly interesting solution is the BIPV parapet, made from semi-transparent modules installed using point fixing. This BIPV parapet serves as both a distinctive architectural detail and a protective feature, while most importantly delivering effective energy generation.

ML System products:

BIPV Parapet – semi-transparent modules in glass-glass technology

PL

THE PARK OFFICE CENTER KRAKÓW

Project:
Office Campus – The Park

Location:
Krakow, Poland

Design:
APA Wojciechowski Architekci

Type of investment:
New construction

BIPV installation:
Surface: 253 m²
Power output: 49,5 kWp

ML System products:
BIPV Attic Wall – opaque modules

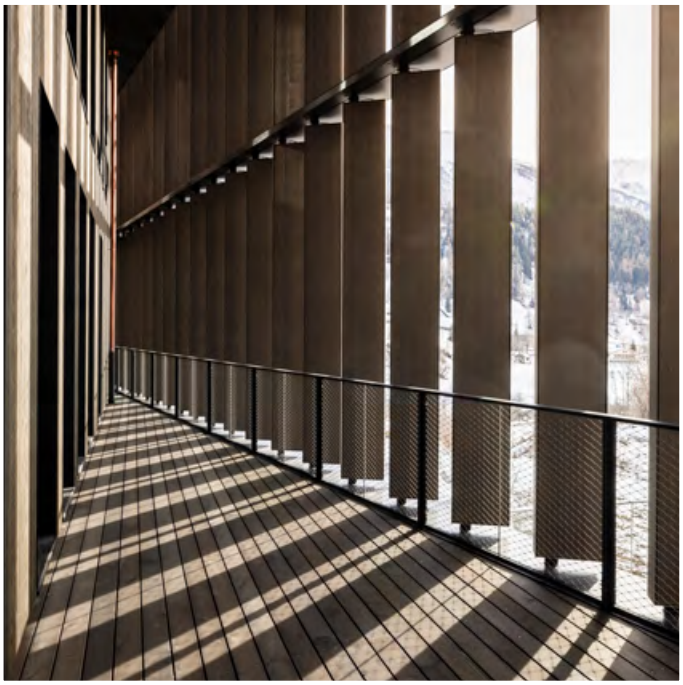
The Park in Krakow is a self-sufficient Class A office campus. Carefully selected greenery, small architectural elements, outdoor relaxation zones, and a wide range of amenities create a comfortable working environment. The entire complex was designed in line with biophilic design principles, which—according to research—enhance productivity, creativity, and the well-being of people working in such environments. The project also incorporates numerous sustainable solutions. Integrated photovoltaic systems were installed on the rooftops in the form of parapets. This strategic placement allows for efficient energy generation, even in a densely built-up area. The Park development is BREEAM certified.

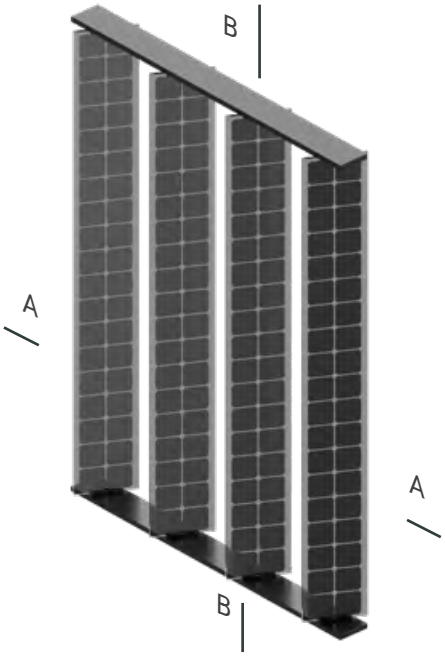
SUNSHADES

BIPV

116

Sunshades by ML System offer extensive design flexibility. These architectural elements serve as façade details that control interior sunlight exposure. The system can be mounted vertically or horizontally. The color of the glass and the arrangement of photovoltaic cells provide broad aesthetic possibilities.

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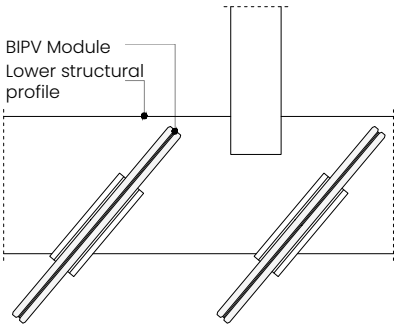
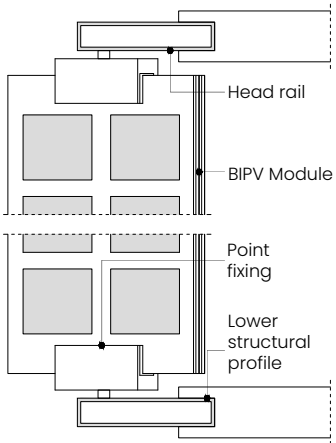
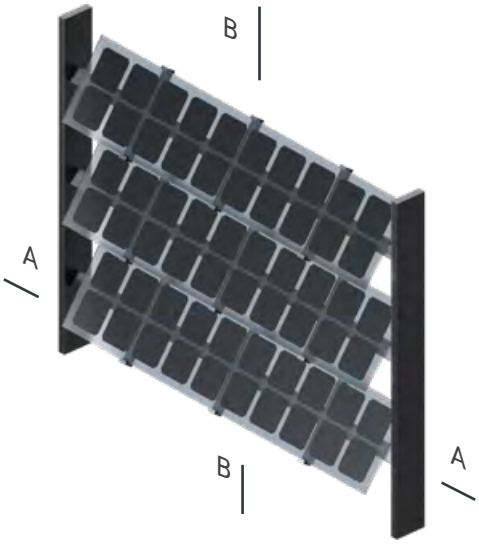

BIPV Module
Lower structural profile

B-B


Head rail
BIPV Module
Point fixing
Lower structural profile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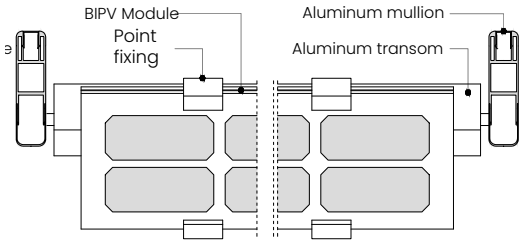
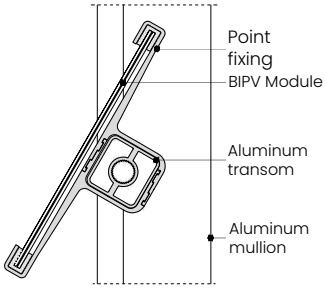

BIPV Module
Point fixing
Aluminum mullion
Aluminum transom

B-B


Point fixing
BIPV Module
Aluminum transom
Aluminum mullion

PL

WSPIM JAGIELLONIAN UNIVERSITY KRAKÓW

Project:
Educational Building – Faculty
of International and Political Studies,
Jagiellonian University

Location:
Krakow, Poland

Design:
Team Architekci

Type of investment:
Renovation

BIPV installation:
Surface: 739 m²
Power output: 99 kWp

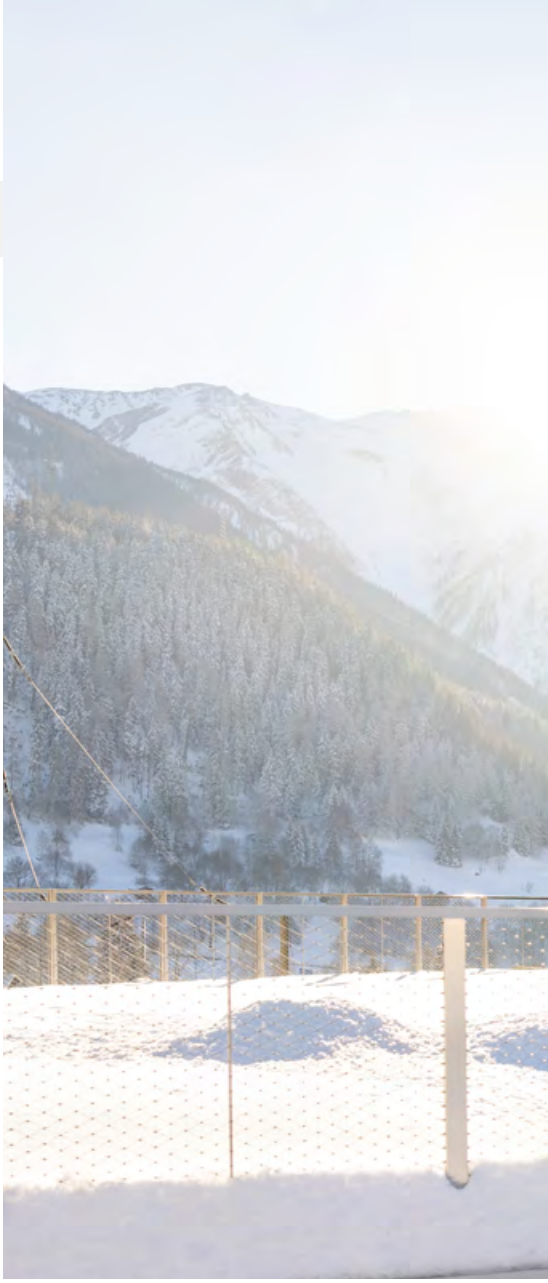
The Faculty of International and Political Studies at the Jagiellonian University has long faced spatial limitations. Eventually, the faculty was relocated to 4 Reymonta Street, occupying the former premises of the Faculty of Physics, Astronomy, and Applied Computer Science. The eight-story building, with a usable area exceeding 11,000 m², underwent a complete transformation. The renovation was carried out in accordance with the principles of sustainable development, with particular attention to environmental impact throughout the building's lifecycle. As part of the upgrade, the entire southern façade was fitted with an integrated BIPV sunshade system. This solution completely redefined the building's appearance and significantly improved user comfort. Most importantly, it contributed to lower operating costs through the generation of clean energy.

ML System products:

BIPV Sunshades – semi-transparent louvers in glass-glass technology

CH

ENDIGO OFFICE FIESH



Project:
Office and Production Building – Endigo

Location:
Fiesch, Switzerland

Design:
BAUATELIER12

Type of investment:
New construction

BIPV installation:
Surface: 181 m²
Power output: 16,3 kWp

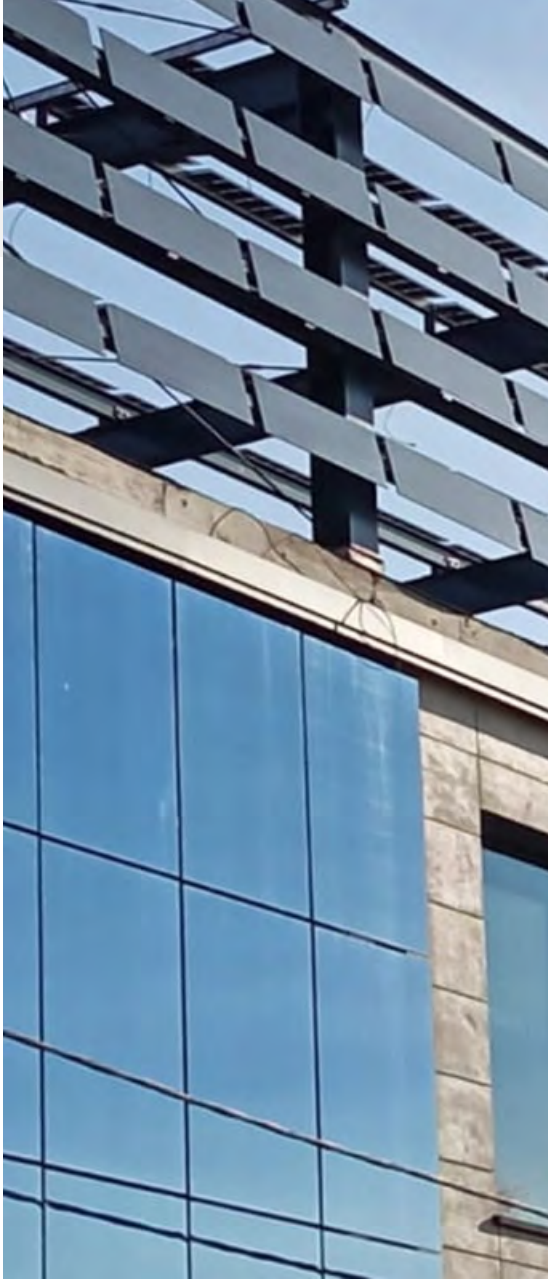
Endigo is a Swiss company headquartered in Fiesch, specializing in comprehensive energy and technology services, primarily operating in the Goms region. It is here that the company built its new headquarters. Surrounded by a mountainous landscape, the building features a compact form, yet its façade conveys a sense of openness and dimension. In line with the architects' vision, the structure is clad with vertical louvers. Reflecting Endigo's commitment to modern sustainability, the external sunshades are equipped with photovoltaic cells beneath glass surfaces. These vertical BIPV sunshades form an industrial architectural element that not only generates energy but also contributes to reduced operating costs.

ML System products:

BIPV Sunshades – opaque louvers
in glass-glass technology

PL

SHOPPING CENTER OŁAWA



Project:
Oława Shopping Center

Location:
Oława, Poland

Technical design:
ML System

Type of investment:
Expansion

BIPV installation:
Surface: 309 m²
Power output: 26 kWp

The owner of Oława Shopping Center is a strong advocate of renewable energy, with other businesses already utilizing wind energy and energy storage systems. During the development of the shopping center, the goal was to integrate as many BIPV solutions as possible. The building's roof proved to be the ideal space for implementation. A specially designed steel structure enabled the installation of glass photovoltaic sunshades. These sunshades are not only positioned above the roof but also extend to the steel lattice parapet, forming a distinctive crowning feature that visually enhances the building's height. The sunshades are made of laminated toughened glass with an external graphite-tinted pane and are mounted to the steel structure using standard aluminum system brackets.

ML System products:

BIPV Sunshades – modules
in glass-glass technology

NL

AERES UNIWESITY ALMERE

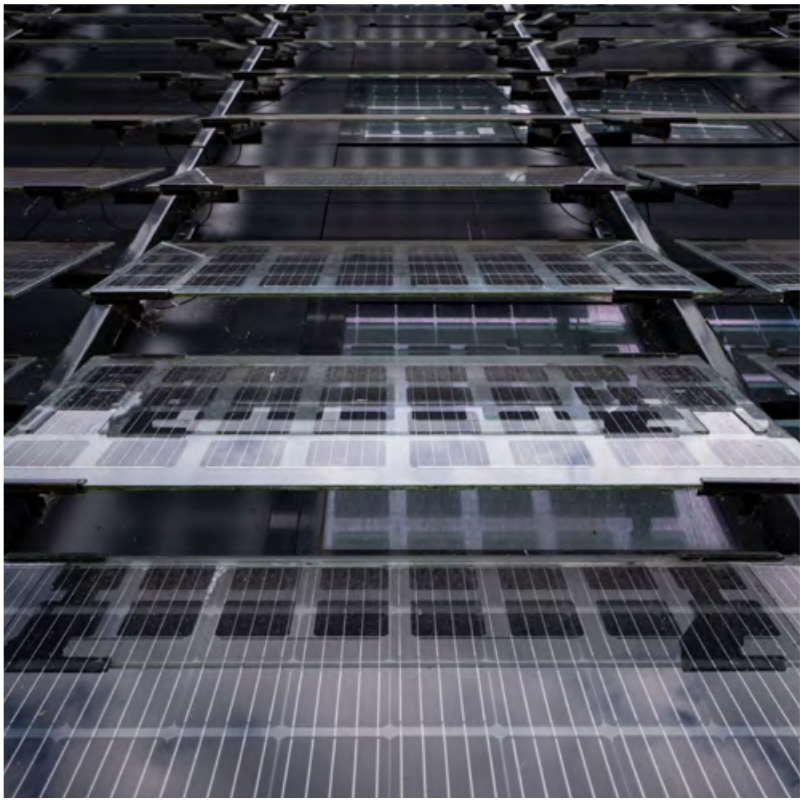
Project:
Aeres University Building

Location:
Almere, Netherlands

Design:
BDG Architects

Type of investment:
New construction

BIPV installation:
Surface: 534 m²
Power output: 69 kWp



The Aeres University building at the Floriade site in Almere is an educational landmark and an icon of green energy. Plants on the walls radiate the energy of nature, while photovoltaic glazing integrated into the façade generates green electricity. The building was designed as an energy-intelligent structure, with façades having varied properties depending on their orientation. The west façade features photovoltaic solar shading that provides both shading and energy generation. The east façade facing the garden is covered with plants that change color with the seasons. Aeres is the first school in the Netherlands to receive the WELL Platinum certification, guaranteeing a healthy and energy-efficient indoor climate and environmental care.

ML System products:

BIPV roof glazing
transparent glass-glass modules

PL

ROAD BORDER CROSSING BUDOMIERZ

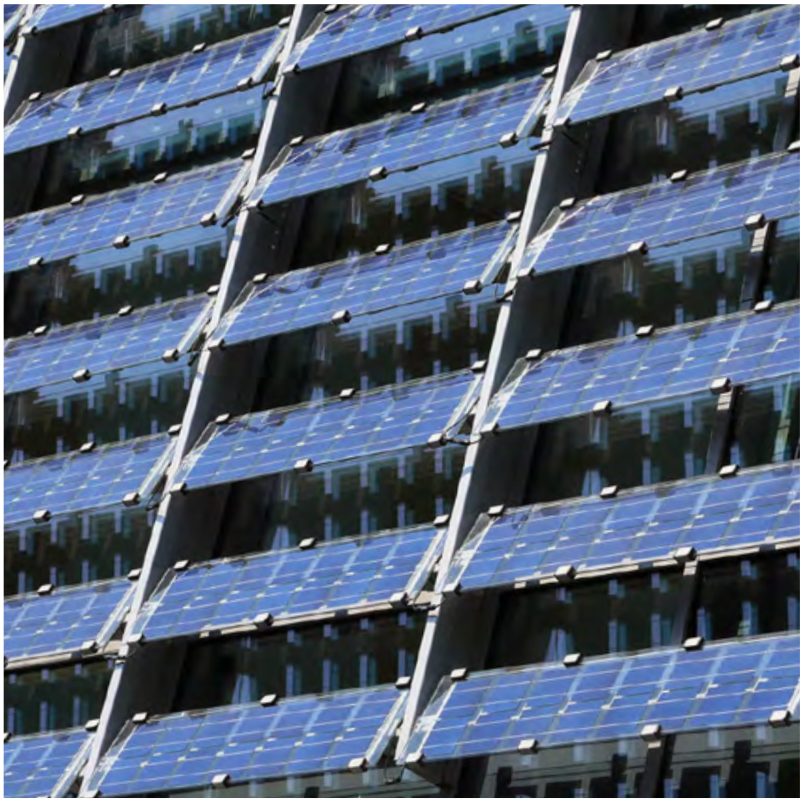
Project:
Administrative Building – Budomierz Road Border Crossing

Location:
Budomierz, Poland

Design:
ST Architekci

Type of investment:
New construction

BIPV installation:
Surface: 107 m²
Power output: 11 kWp



ML System products: tion.

BIPV Sunshades – semi-transparent louvers
in glass-glass technology

Budomierz is a city that borders with Ukraine. It is here that a modern border crossing facility was established, comprising the main administrative building, customs checkpoints, inspection facilities, garages, designated service dog areas, and traveler restrooms. This border crossing features a sustainable and technologically advanced design, including its own wastewater treatment plant, water supply system, and an array of modern solutions such as electronic surveillance, traffic control systems, and a photovoltaic installation. The façade of the administrative building incorporates BIPV sunshades. These glass louvers not only generate electricity but also provide shading for the building's southern elevation.

PL

CITY ROAD MANAGEMENT GLIWICE

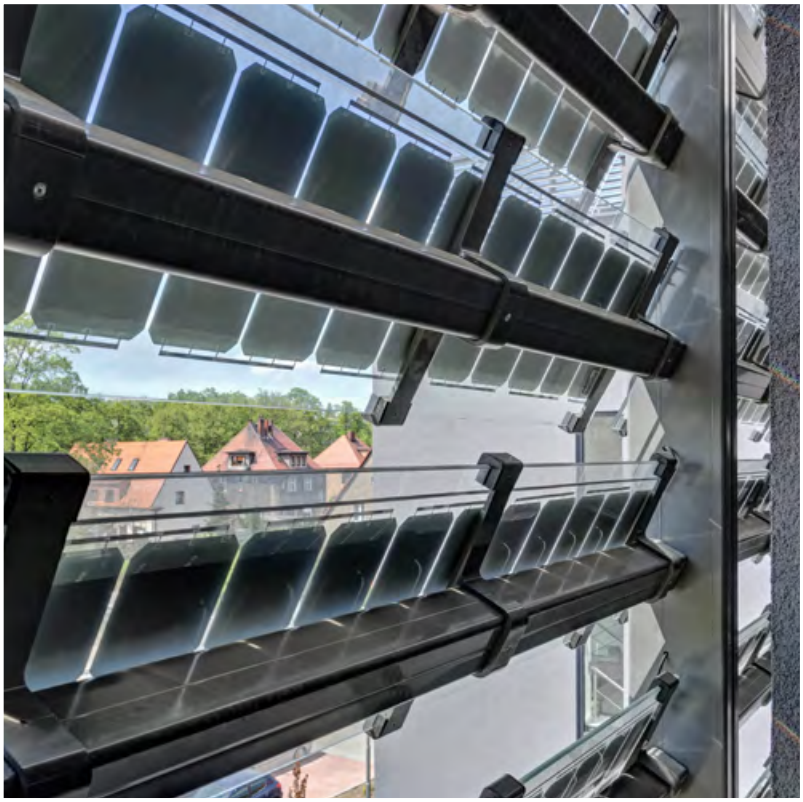
Project:
Office Building – Municipal Roads Authority

Location:
Gliwice, Poland

Technical design:
ML System

Type of investment:
Expansion

BIPV installation:
Surface: 91 m²
Power output: 11 kWp



The Municipal Roads Authority in Gliwice now operates from a thoroughly renovated building. This office facility ranks among the most modern in Poland—ecological, energy-efficient, and equipped with high-quality technology. The project was awarded the "Modernization of the Year" prize in the Public Utility Buildings category. The upper part of the building's façade features BIPV sunshades mounted on a dedicated aluminum support structure. The photovoltaic louvers generate electricity during the day, and at night, when illuminated, they become a striking architectural accent.

ML System products:

BIPV Sunshades – semi-transparent modules in glass-glass technology

PL

METALPOL COMPANY MIELEC

Project:
Production and Office Building – Metalpol

Location:
Mielec, Poland

Technical design:
ML System

Type of investment:
Expansion

BIPV installation:
Surface: 170 m²
Power output: 19 kWp

Metalpol is a family-owned company with over 50 years of tradition, located in the Mielec Economic Zone. The company specializes in the production of springs and components formed from wire, tape, and sheet metal. Due to rapid growth, the decision was made to expand the facility. The investment included the construction of additional warehouse and production space as well as a research and development department. The modern buildings were equipped with renewable energy solutions. Horizontal photovoltaic sunshades were installed on a steel support structure. This system includes a mechanism that adjusts the angle of the photovoltaic louvers, significantly improving the efficiency of green energy generation. The sunshades form an external plane of the façade, resulting in well-balanced lighting for the building's glazed interiors.

ML System products:

BIPV Sunshades – semi-transparent louvers
in glass-glass technology

PL

PRIMARY SCHOOL ROKIETNICA

Project:
Educational Building – Primary School

Location:
Rokietnica, Poland

Design:
Arch. Wojciech Błaszak

Type of investment:
Expansion

BIPV installation:
Surface: 250 m²
Power output: 29 kWp

The new building of the Jan Brzechwa Primary School in Rokietnica features a compact, modern form with a flat roof. It is one of the most advanced educational facilities in the region, housing twelve classrooms, all equipped with modern teaching and multimedia equipment. The school incorporates numerous environmentally friendly solutions. It is equipped with a heat recovery system and BIPV photovoltaic solar shading. The steel canopy structure at the front of the building is filled with energy-active glass solar shades. This modern construction complements the technical and minimalist character of the white brick façade.

ML System products:

BIPV solar shades – semi-transparent louvers in glass/glass technology

PL

WZIKS JAGILLONIAN UNIVERSITY KRAKÓW

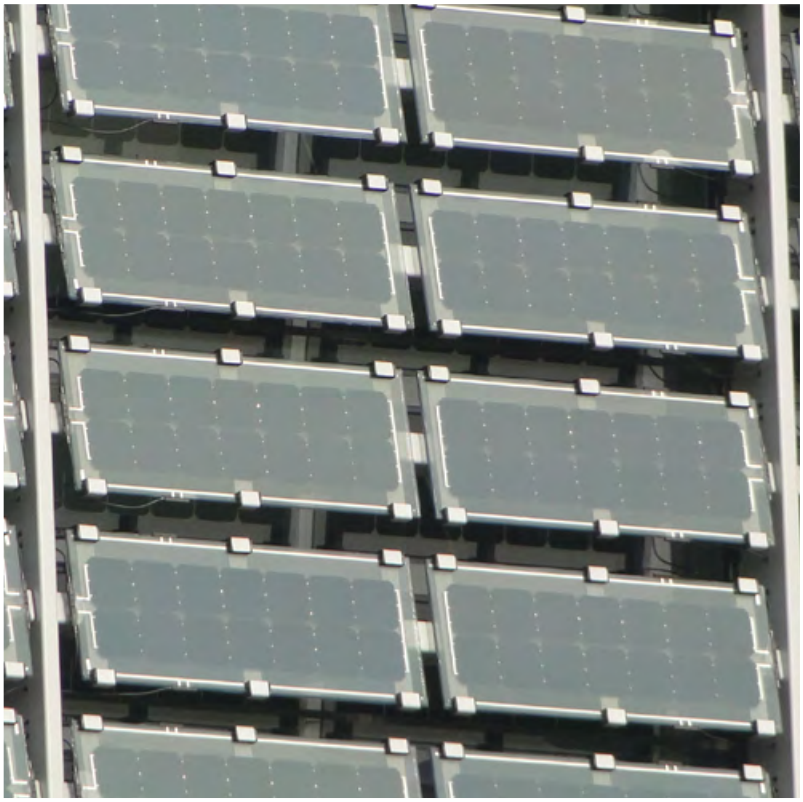
Project:
Educational Building – Faculty of Management and Social Communication, Jagiellonian University

Location:
Krakow, Poland

Technical design:
ML System

Type of investment:
Renovation

BIPV installation:
Surface: 292 m²
Power output: 33 kWp



The building of the Faculty of Management and Social Communication at the Jagiellonian University is located on the Jagiellonian University Campus. The southern orientation of the glass façade previously hindered comfortable use of the facility. On sunny days, the entrance area experienced excessive heat and intense sunlight. Following a decision by the faculty authorities, the building was equipped with a BIPV photovoltaic solar shading system. Glass louvers were installed at an optimal angle to ensure appropriate lighting while reducing solar energy penetration. This solution significantly improved user comfort and reduced operating costs through on-site electricity generation. The solar shades form a glass grid on the façade with visible photovoltaic cells, placing the building among modern facilities utilizing renewable energy sources.

ML System products:

BIPV solar shades – semi-transparent modules in glass/glass technology

Project:
OULU TECH Hall – Kielce Technology Park

Location:
Kielce, Poland

Technical design:
ML System

Type of investment:
Renovation

BIPV installation:
Surface: 383 m²
Power output: 44 kWp

PL

OULU TECH KIELCE

ML System products:

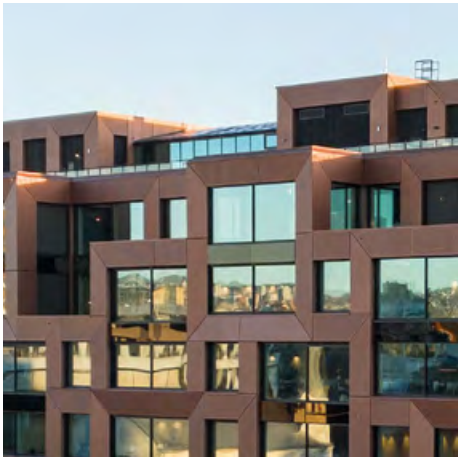
BIPV solar shades – semi-transparent louvers in glass/glass technology

OULU TECH is a hall within the Kielce Technology Park located at 21 Olszewskiego Street. It is intended for companies that base their development on innovative production and service technologies. The building consists of two floors and includes eight independent modules, each capable of separate operation. The interior has been prepared to allow customization according to tenants' specific requirements. The facility incorporates eco-friendly solutions that generate energy through photovoltaic technology. Each building segment features a separate glazed entrance, where the BIPV photovoltaic solar shading system has been implemented. In addition to generating electricity, the shades contribute architecturally by visibly defining the individual segments of the hall.

2D GLASS

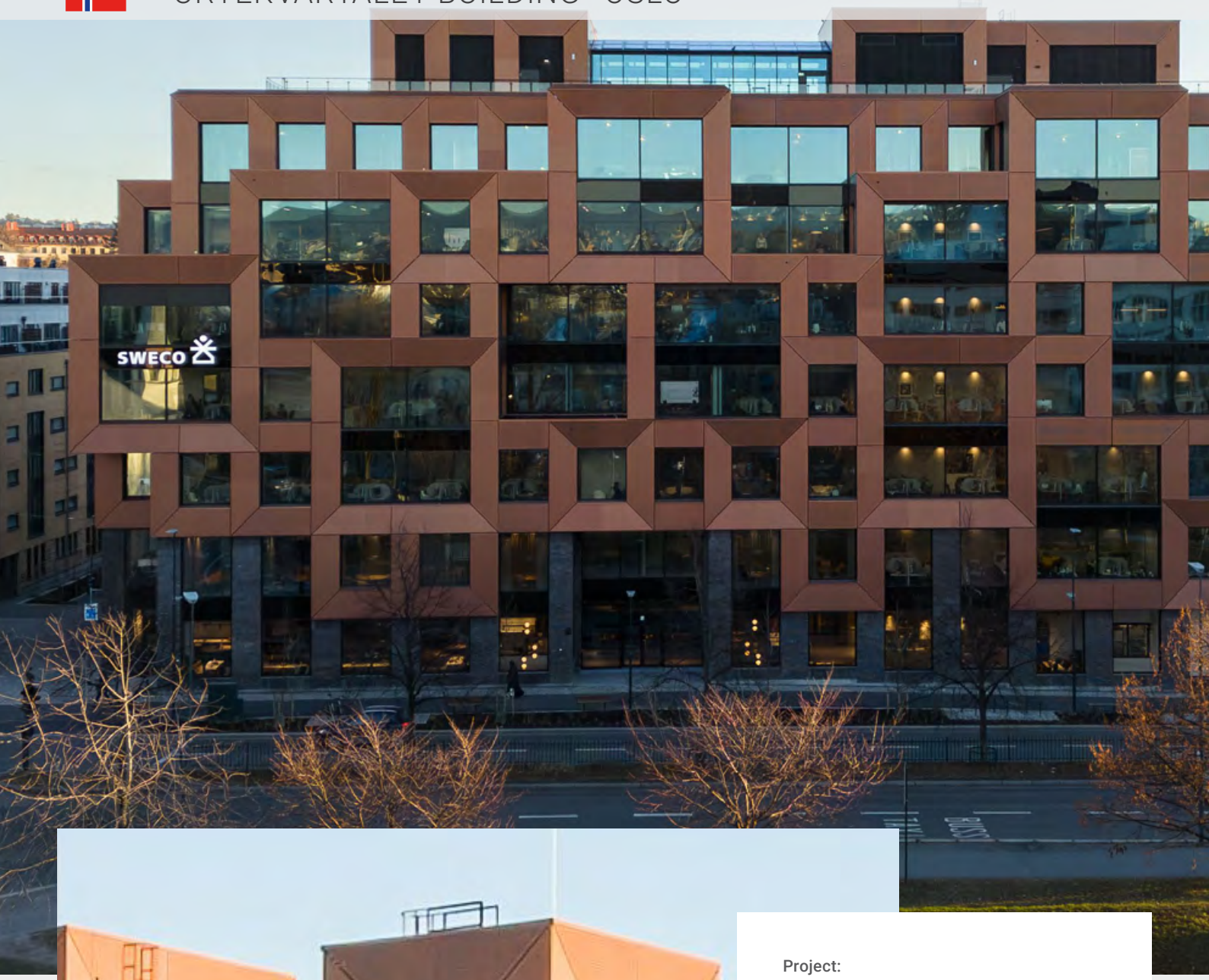
138

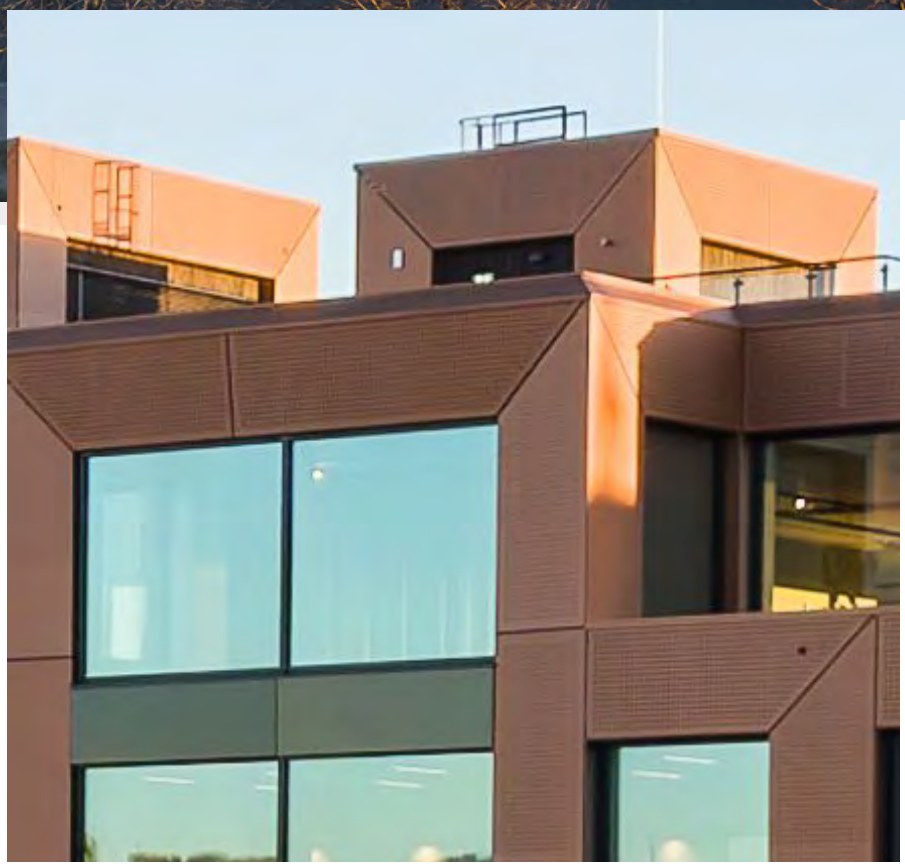
ML System's production and logistics capabilities enable the manufacturing and delivery of architectural glass products without photovoltaic functionality. Various types of glass solutions supplied by ML System have been installed in numerous projects across Europe. The company offers a wide range of solutions, including large-format double-glazed insulating glass units, single-chamber opaque enamelled units, as well as individual toughened ESG panes, laminated VSG panes, and combinations of laminated toughened ESG VSG panes. Comprehensive glass processing capabilities and the option for custom ceramic printing allow the product offering to be tailored to the specific requirements of any project.



NO

URTEKVARTALET BUILDING OSLO





Project:
Urtkevartalet

Location:
Oslo, Norway

Design:
A-Lab

ML System products:
Double-glazed insulating glass units: 6 mm ESG / 16 mm argon / 6 mm ESG Float / 16 mm argon / 44.2 VSG

Products surface: 3,500 m²

Project:
Municipal Library

Location:
Sarpsborg, Norway

Design:
Rodeo Arkitekter

ML System products:
Double-glazed insulating glass units: 6 mm ESG / 16 mm argon / 6 mm ESG Float / 16 mm argon / 44.2 VSG

Products surface: 500 m²

LIBERARY SARPSBORG

NO

PL

CAVATINA HALL BIELSKO BIAŁA

Project:
Cavatina Hall

Location:
Bielsko-Biała, Poland

Design:
Cavatina Holding

ML System products:
Double-glazed insulating glass units: 6 mm ESG / 16 mm argon / 6 mm ESG Float / 18 mm argon + U-profile / 44.2 VSG 1.1

Products surface: 2,500 m²

Project:
Ocean Office Park - Buildings B and D

Location:
Krakow, Poland

Design:
Cavatina Holding

ML System products:
Double-glazed insulating glass units:ESG 6mm/16arg/ESG 6mm Float/ 16 arg/VSG 44.2 1.1/ESG 6mm/ 16arg/ESG 6mm Float/16arg /VSG 44.2 translucent white 1.1
ESG 6mm/16 arg/ESG 6mm Float/ 18 arg + U profil/VSG 44.2 1.1

Opaque double-glazed units:
ESG 6mm/16arg/ESG 6mm
emalit Ral 7021

Products surface: 10,000 m²

OCEAN PARK OFFICE CENTER KRAKÓW

PL

SMALL ARCHITECTURAL FORMS

144

Small architectural forms are a collection of minor construction elements designed to enhance land use, improve aesthetics, and increase functionality. The 21st century has brought photovoltaics into the realm of both practical and decorative urban design. Examples of photovoltaic solutions can now be found in gardens, parks, and playgrounds. Increasingly, lamps, shelters, pergolas, and benches are being equipped with photovoltaic installations. These small-scale photovoltaic power systems are becoming prominent features of the landscape, taking the form of visually engaging spatial elements.

SMART CITY

146

Smart City is a concept centered on investment in renewable energy sources, efficient resource use, and sustainable development. A key aspect is the implementation of advanced information and communication systems that enhance the quality of urban life. A prime example is a bus stop that integrates cutting-edge technologies and solar-powered energy supply. Photovoltaic parking canopies and carports, which generate electricity and are equipped with electric vehicle charging stations, perfectly align with the Smart City vision.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