aestech GLAZING

Renovation and Modernization of Glass Facades

using frameless facade solutions based on Aestech Glazing technology

aestech.com

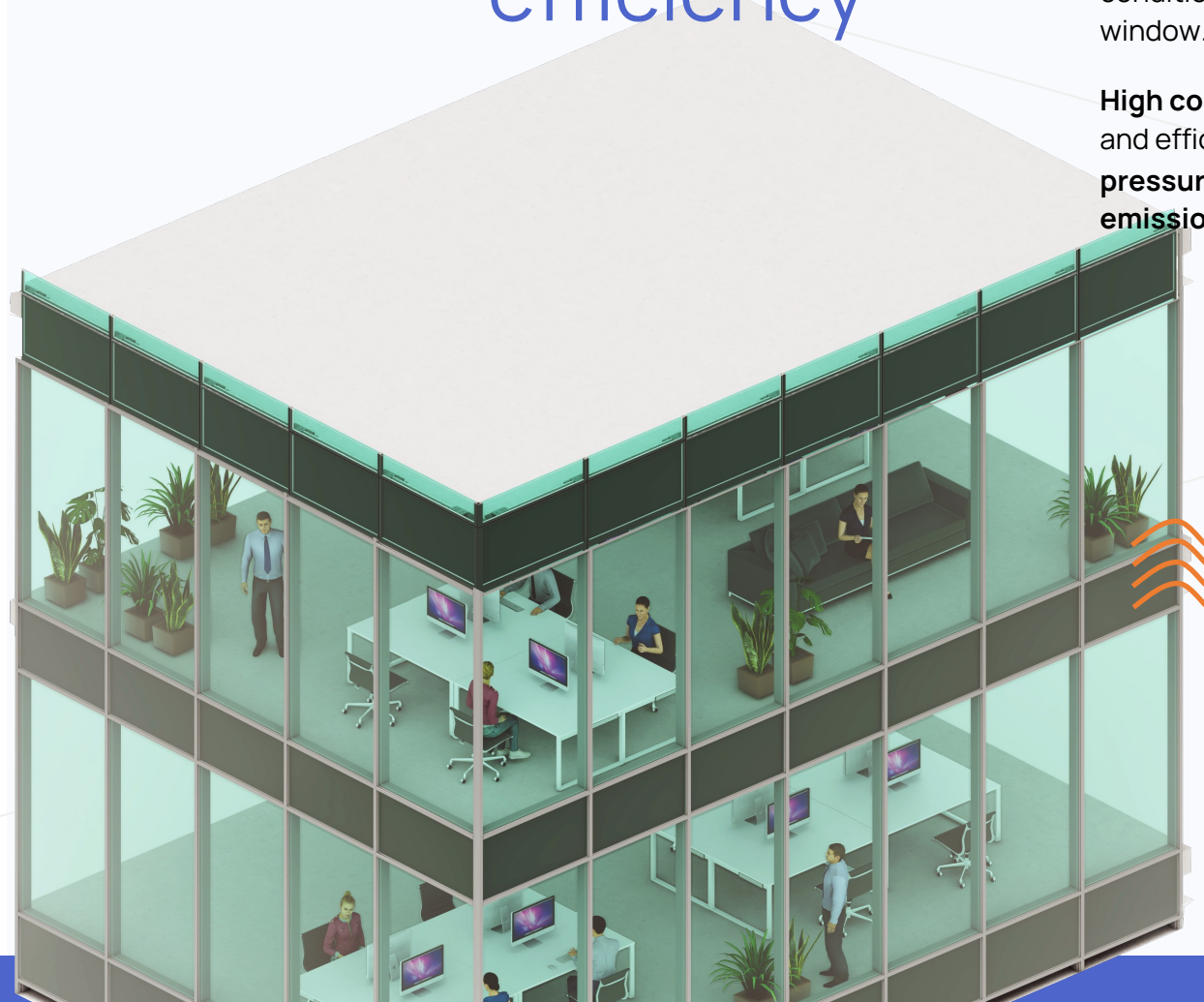
Complexity of renovation

Loss of income – the building needs to be closed for reconstruction for a long time. **Complexity of redesign** due to lack of documentation.

Additional repair work – not all new facade solutions can be adapted to old load-bearing structures.

Logistical challenges – buildings are often located in central parts of the city with difficult access.

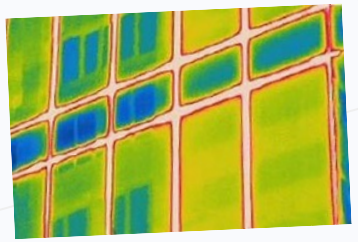
The problem of waste disposal after renovation.



Low energy efficiency

Facade elements wear out due to environmental influences, so **more and more energy is required** to maintain comfortable conditions – money literally flies out the window.

High competition for tenants from modern and efficient office centers and **constant pressure from regulators due to high emissions.**



20% – 35%
of energy costs are paid for losses due to outdated facades

Energy consumption in buildings accounts for almost 49% of all energy consumption and 77% of all electricity, and 47% of greenhouse gas emissions

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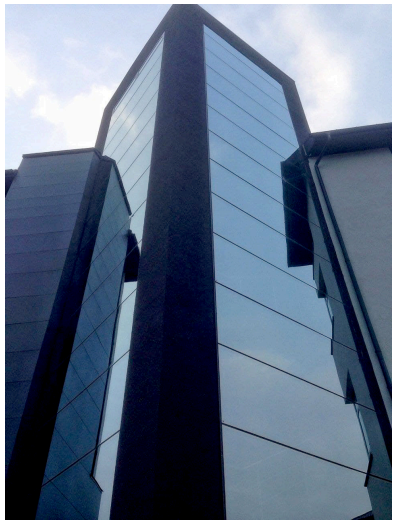
Frameless glass facade systems by Aestech — new technologies for glass facade construction and renovation

Save 25% to 40% annually on energy costs alone and maintain your income during renovations with Aestech

before

after



Приклад реновації скляних фасадів готелю в м. Луцьк, Україна

Aestech ensures efficient work at all project stages:

01.	Building analysis to determine the optimal solution
02.	Development and design of the structure
03.	Calculation and production of the system
04.	Logistics services
05.	Dismantling and installation works
06.	Technical supervision
07.	Service and warranty maintenance
08.	Warranty for Aestech solutions

Step-by-step work on each floor without interrupting building operations

The unique features of Aestech technology allow renovation work to be carried out gradually, on each individual floor

#1 Fully functional floors with Aestech facade systems installed

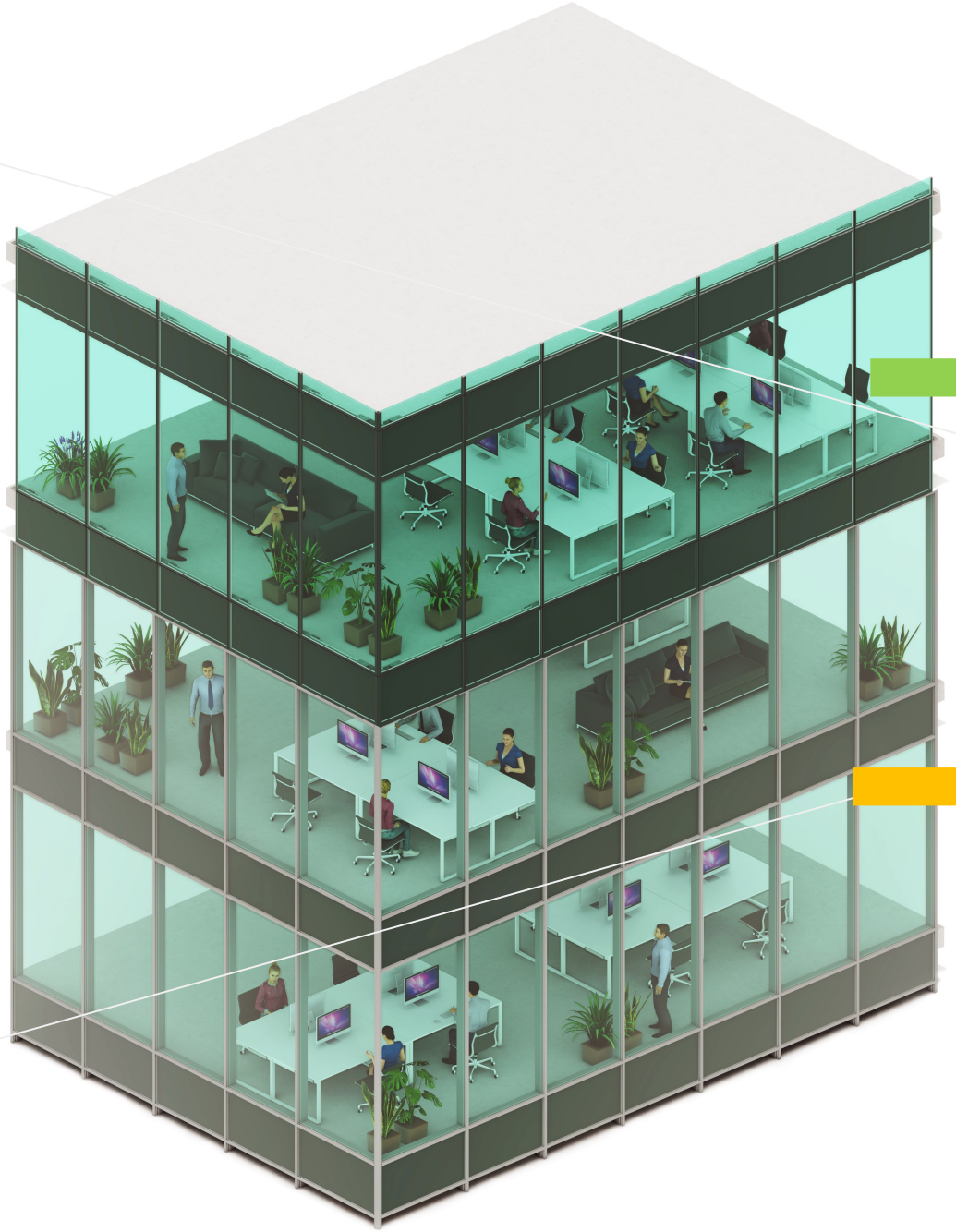
#2 Floor in the process of installing the system

#3 Floor in the process of preparing the system for installation

If desired, all floors below can remain fully accessible for regular use with the old facade system in place

The absence of metal mounting elements ensures energy savings of 20% to 35% per year

Aestech facade systems using insulated glass units with higher stiffness, do not require any metal supports or ridges, which are the primary cause of heat loss. By eliminating metal, we have significantly improved the thermal performance characteristics of Aestech facade systems.



Thermal transmittance coefficient of Aestech facade system with insulated glass units with higher stiffness

0,98 (-25%)

U(W/m^{2*0}K)

Thermal transmittance coefficient of a modern facade system using metal structures

1,23

U(W/m^{2*0}K)

The thermal analysis was carried out using the Window (v.6.3.74.0) + Therm (version 6.3.46.0) software package developed at the Lawrence Berkeley National Laboratory (LBNL), University of California, USA. Estimated size of glass units is 1500x3200.

Usable area comparison for standard curtain wall system and Aesteh curtain wall system

Standard Curtain Wall System

Floor area — 1250 m²
Usable floor area — 1212 m²
Unused floor area — 37,5 m²

Aestech Curtain Wall System

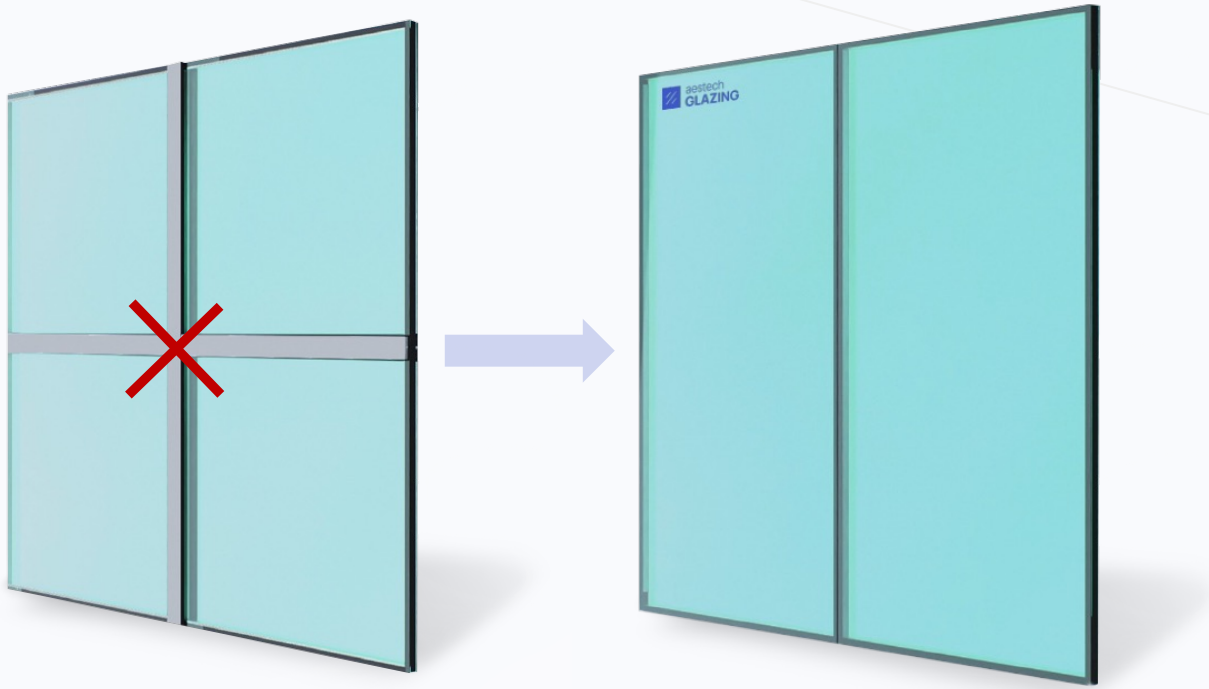
Floor area = Usable floor area — 1250 m²

The absence of racks adds to the effective area on each floor

25 m

50 m

Aestech Glazing – technology for the production of insulated glass units with higher stiffness



No need for mullions and ridges

Aestech glass units are semi-bearing. Connecting elements are simply screwed into the composite frame. This is how glass units are interconnected and then attached to the load-bearing elements of the building.

Glass Reinforced Plastic (GRP)

Together with a special adhesive, they transform the glass unit into a flat tube in which all glass layers are engaged in bearing the load.

Quality confirmed by the most authoritative certification center of the European Union

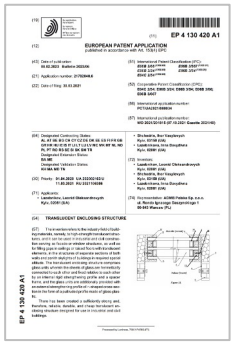
ift Rosenheim

2023, Classification Report 23-002572-PR01
2023, Test Report 22-003184-PR01
2022, Long term test report 22-002451-PR01

The uniqueness and authorship of the technology are proven and protected by patents

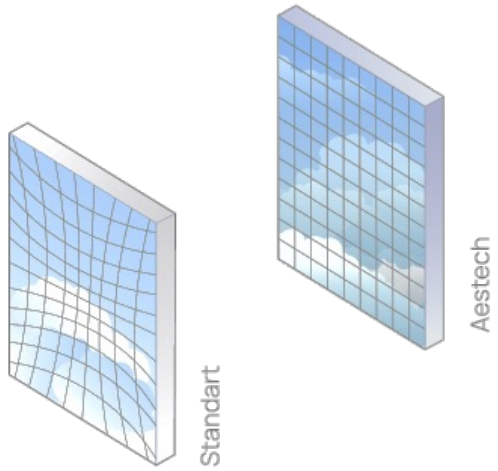
Germany

Ukraine



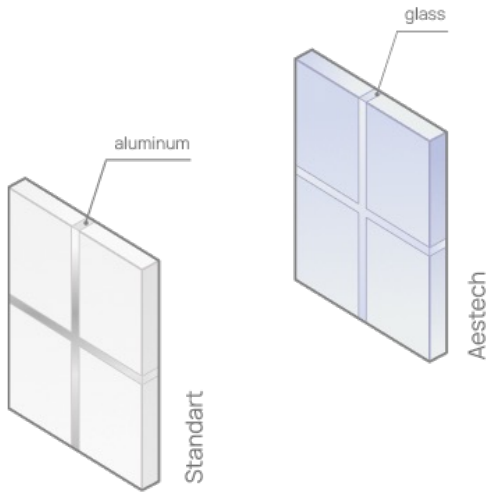
EU

The advantages of our technology make it possible to implement any architectural solutions



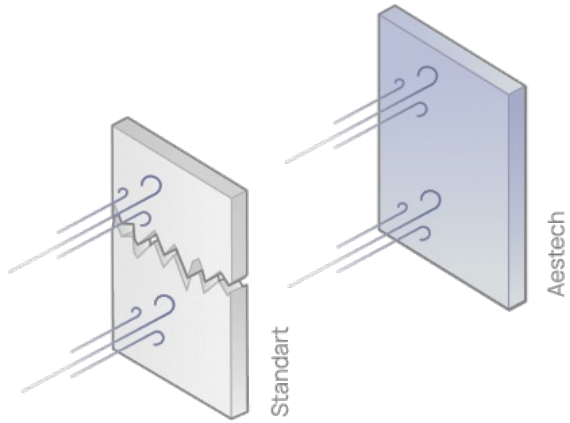
Low level of optical distortions, up to their visual absence

Using frameless glass units from Aestech in façade glazing significantly reduces the level of optical distortions compared to conventional glass units.



The absence of visible elements of metal structures

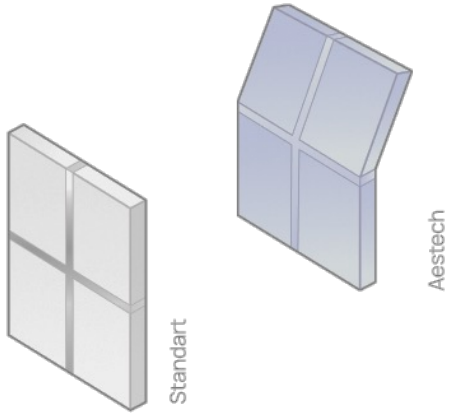
You get additional square meters for sale or rent by freeing the space inside from deep aluminum profiles and spider brackets. Our system is flat inside and out.



Higher bearing capacity

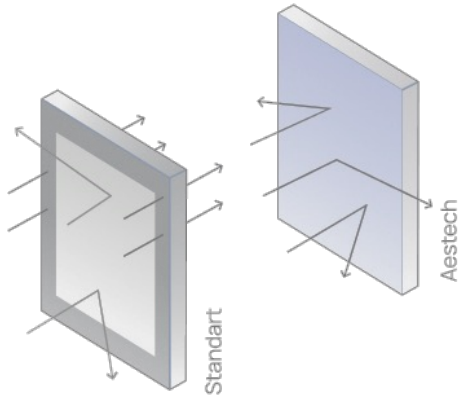
The bearing capacity is much higher than that of conventional double-glazed windows.

The advantages of our technology make it possible to implement any architectural solutions



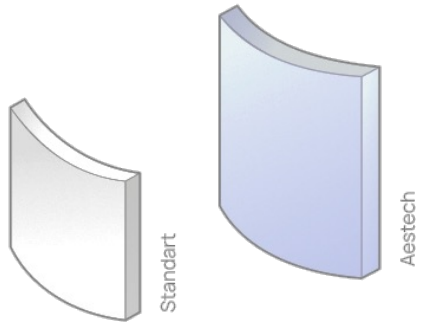
Connecting glass unit to glass unit or to surface on any angle

You can attach connecting elements directly to the pultrusion profile integrated into the spacer frame of the insulated glass unit.



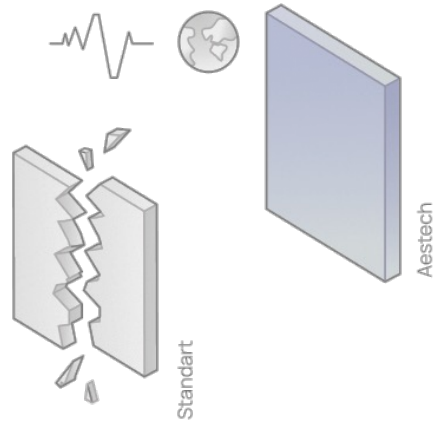
Increased level of heat and sound insulation

The level of sound and thermal insulation in the frameless facade glazing system using insulated glass units with higher stiffness is at least 20% higher than traditional constructions with conventional glass units due to the absence of continuous metal tube structures such as aluminum pillars.



Large radial elements

The possibility of using solutions with radial glass elements with a radius of 1.2 meters or more.



Increased seismic resistance

The increased seismic resistance of the frameless facade glazing system using insulated glass units with higher stiffness is achieved due to the fixation of the glass units only on two sides.

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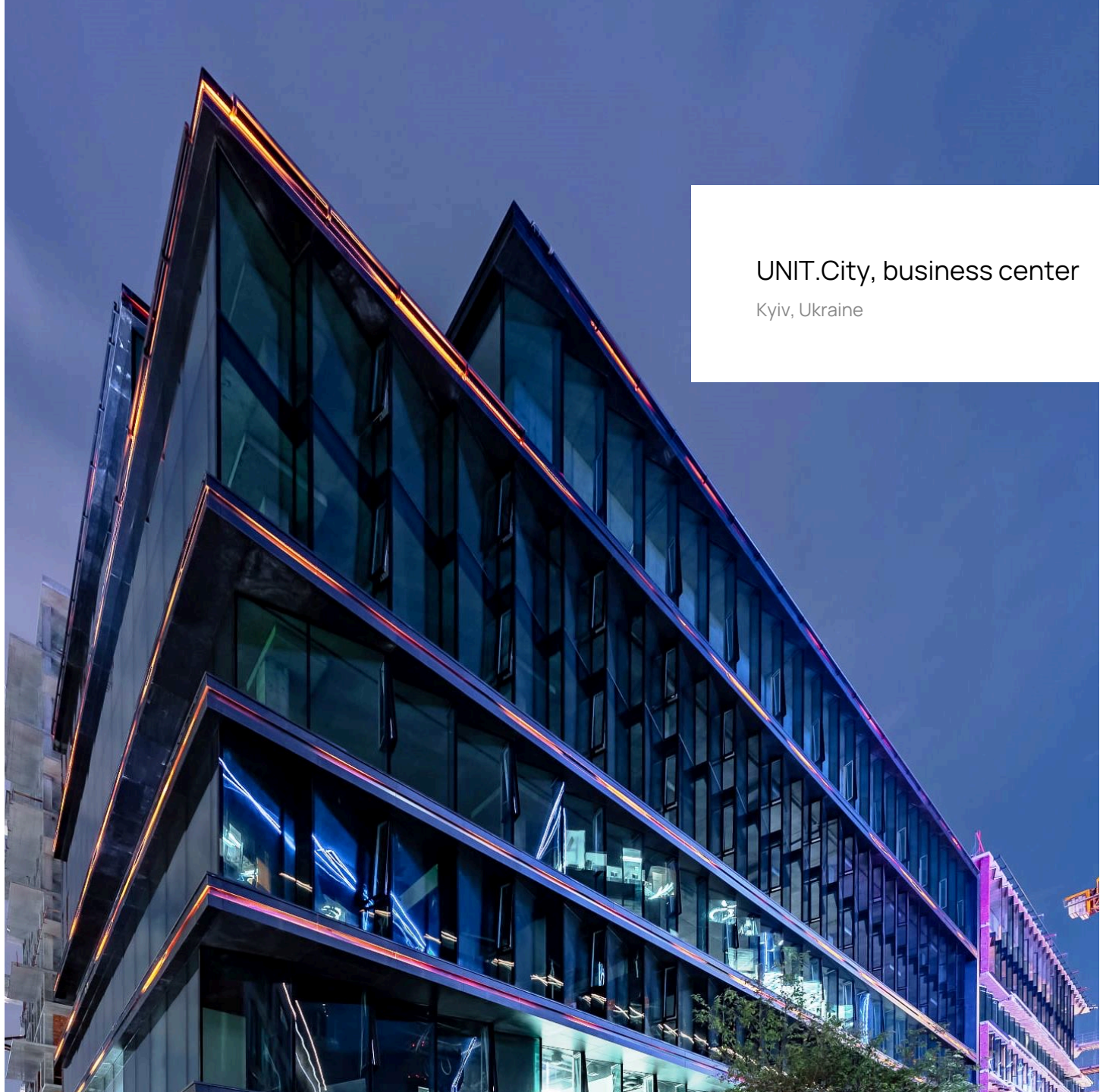
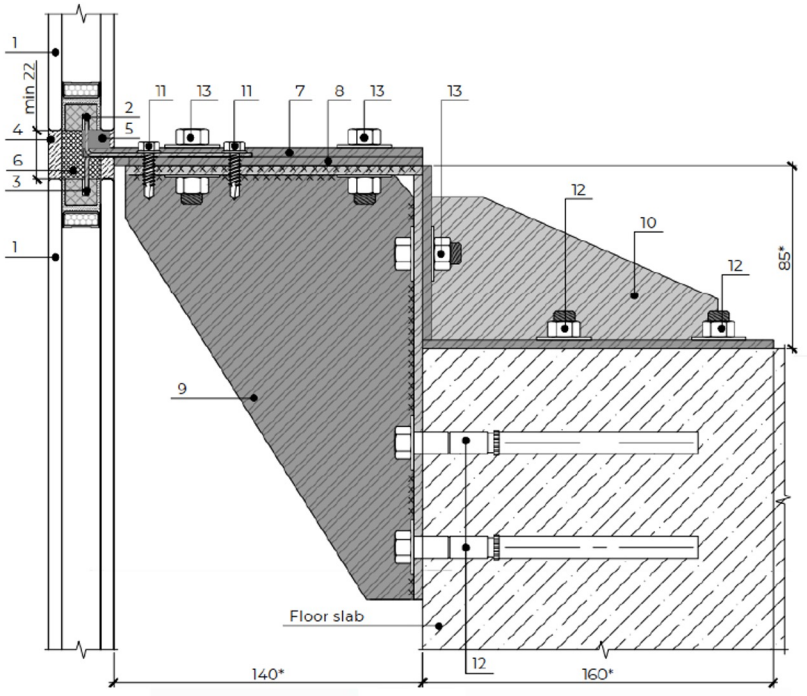
Projects implemented based on the technology

Over 100 projects in 15 years



UNIT.City, business center

Kyiv, Ukraine



Scheme of installation of insulated glass units with higher stiffness on outriggers in frameless facade glazing

1. Insulated glass unit with higher stiffness
2. Upper hook
3. Lower hook
4. Structural silicone sealant
5. Plastic lining under the insulating glass unit
6. Polyethylene foam sealant
7. Steel support for insulated glass unit
8. Steel sheet fire barrier
9. Steel support bracket
10. Auxiliary bracket
11. Stainless steel self drilling screw 3.9x13* with a drill
12. Anchor
13. Bolt connection M10*

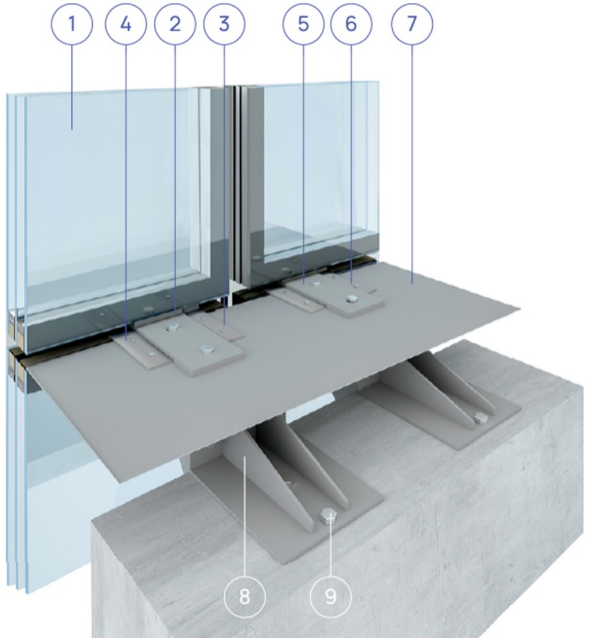
The use of frameless glazing technology in the construction of a business center has allowed for an increase in useful space and improved the energy efficiency of the building. The modern design of the building, provided by this technology, adds to the overall aesthetic appeal.

The facade is a combination of an all-glass wall formed by glass units on one side and an angled connection without the use of metal profiles on the other.

The glass units on the top floor are 5.8 meters high and fixed only at the top and bottom sides.

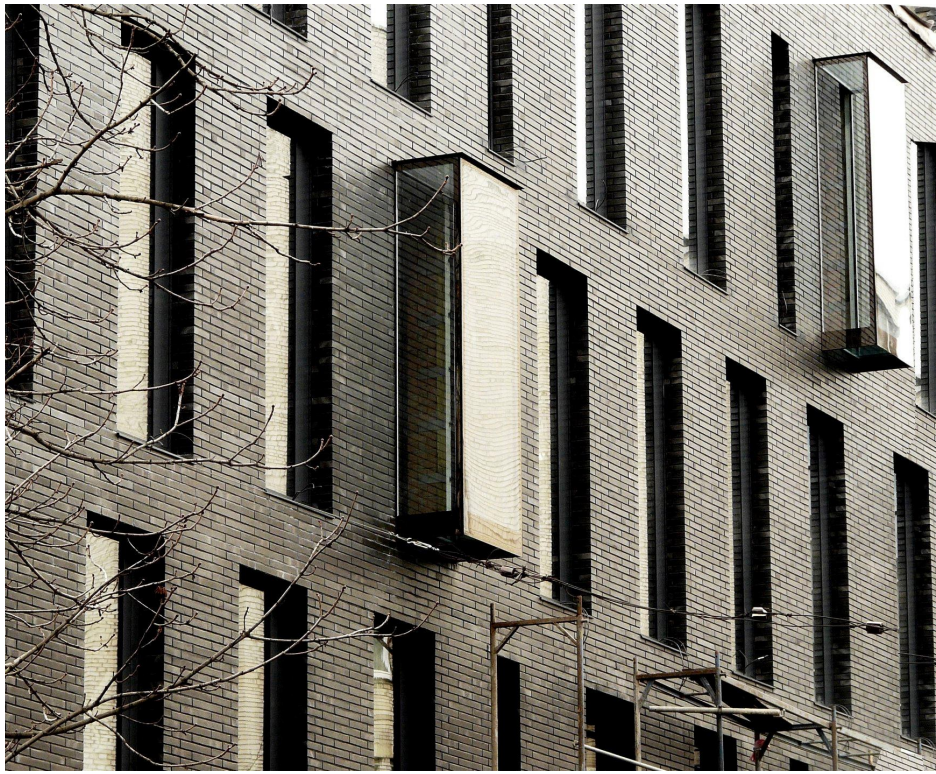
Scheme of the facade system on extended brackets

1. Insulated glass unit with higher stiffness
2. Plastic shims
3. Upper L-bracket
4. Lower L-bracket
5. Steel support
6. Self-drilling screw
7. Steel sheet — fire protection
8. Auxiliary bracket
9. Wedge anchor



Bay windows in the building on Mykhailivska Street

Kyiv, Ukraine



No frames. No visible elements. Strong and beautiful. Four fully glazed bay windows delicately decorate the building. An elegant translucent structure that pleases the eye in a modern city.

All-glass bay windows as a decoration of the building in the historic part of the city.

Chicago Cube, entrance group of the «Chicago» residential complex

Kyiv, Ukraine

The entrance group of the residential complex is designed to impress guests and passers-by. The large-scale glass structure, close to the shape of a cube, is designed in such a way that even with its proportions, it excludes the use of aluminum support systems. This makes the entrance group light and aesthetically pleasing.

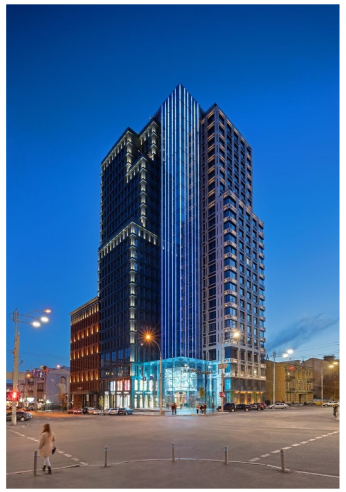
The massive glass entrance structure has become the hallmark of the capital. The world's largest glass cube, towering 12 meters high, is made of glass units. We hope that in the future, the "Chicago Cube" will be included in the Guinness Book of Records.

Glass size: max 5.3 x 2.8 meters.

Integrated glass roof anti-icing system.

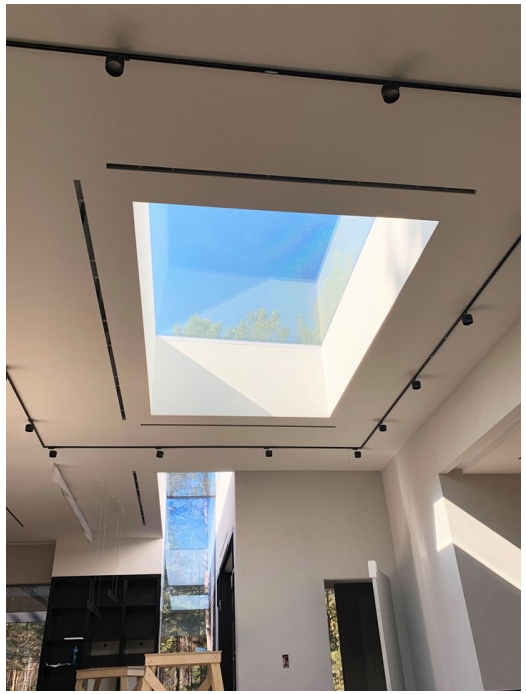
Self-bearing all glass structure.

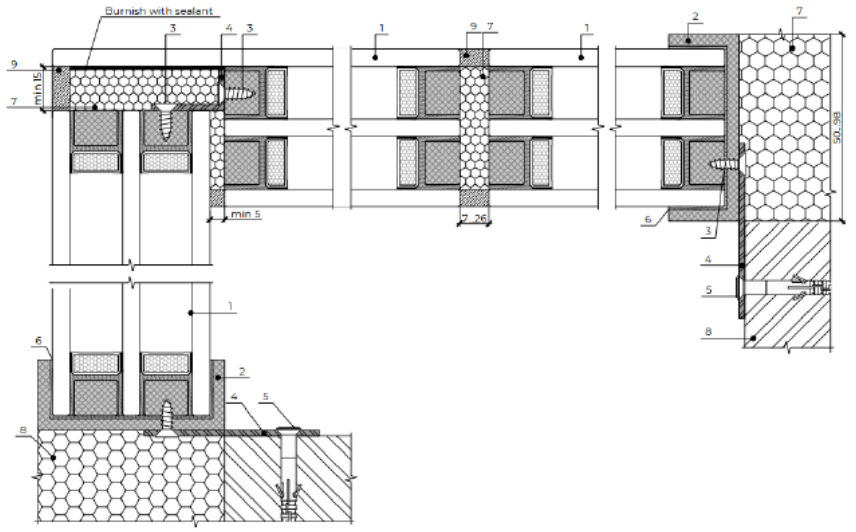
Perfect look outside and inside.



Riviera Village, Private house

Kyiv Region, Ukraine





1. Glass unit with higher stiffness
2. Fiberglass U profile
3. Stainless steel countersunk self tapping screw 4.8x13*
4. Anchor plate (60x50x2 mm)*, the plate installation pitch depends on the wind and weight loading on the facade glazing
5. The spacer anchor or dowel
6. High adhesion adhesive
7. Polyurethane mounting foam
8. Structural support (wall, column, etc.)
9. Structural silicone sealant

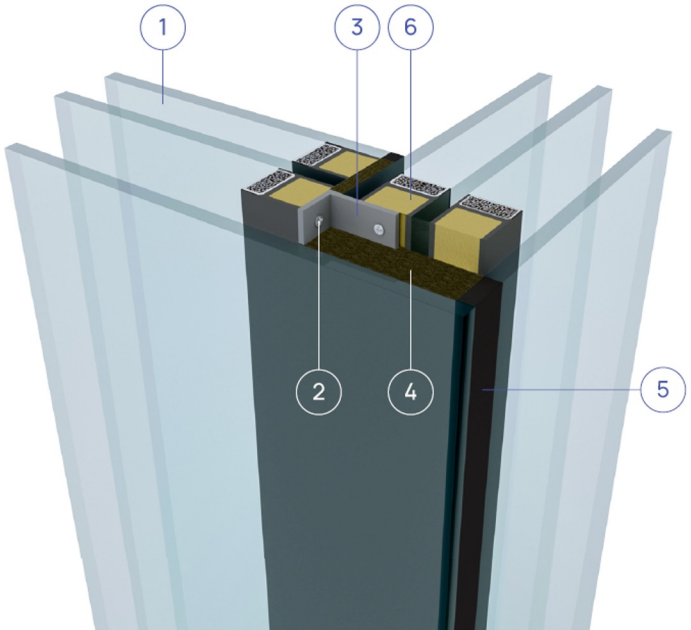
Aestech's panoramic facade systems can improve the appearance of a country house and its energy efficiency in winter and hot summer months.

Mirror effect from the outside.

Improved visual appeal: unobstructed views, modern design.

Enhanced energy efficiency: reduced heat loss/gain, lower costs.

All-season performance: suitable for any weather condition.

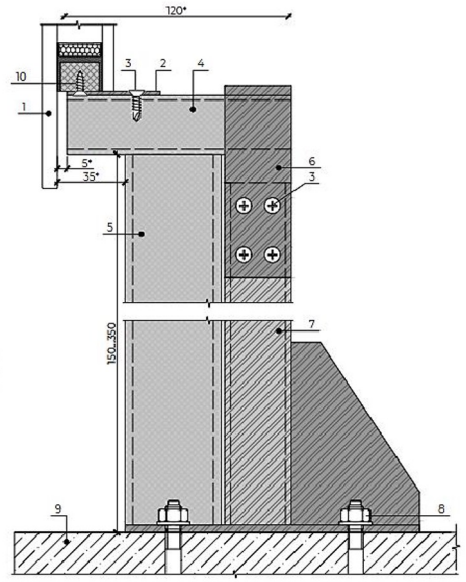


Frameless corner window solution

1. Insulated glass unit with higher stiffness
2. Self-tapping screw
3. Anchor plate
4. Foamed polyethylene sealing insulation
5. Structural silicone sealant
6. Fiberglass pultrusion profile

Chain of gas stations

Kyiv Region, Ukraine



Each glass unit connects independently to the building. In case of an earthquake, our glass units have the flexibility to move and without making pressure on the neighboring glass units.

Also, Aestech glass units have much higher strength and damage resistance.

1. Insulated glass unit with higher stiffness
2. Anchor plate t=2 mm
3. Stainless steel self drilling screw 3,9x13* with a drill
4. Fiberglass tube (30x30x4 mm)*, filled with polyurethane foam
5. Fiberglass tube (50x50x4 mm)*, filled with polyurethane foam
6. Steel fixing clamp
7. Supporting steel bracket
8. Steel anchor or dowel
9. Supporting structure (plate)
10. Stainless steel countersunk self tapping screw 4,8x13*

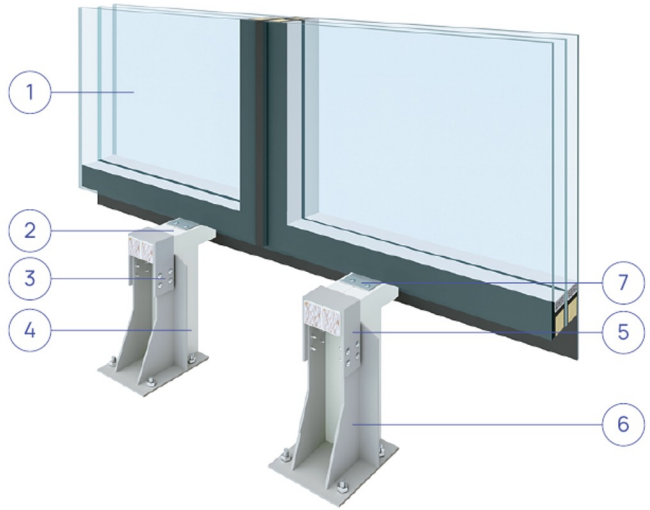
The modern look of the gas station attracts car owners. We implemented a project of large-format glazing that fits perfectly into the architectural solution and improved the energy efficiency of the complex.

Large-format storefronts with dimensions of 1.6 x 4.2 and 2.4 x 4.2 meters high.

Without visible vertical load-bearing elements.

Scheme of the lower unit of the facade system on support brackets

1. Insulated glass unit with higher stiffness
2. Fiberglass tube filled with polyurethane foam
3. Self-drilling screw
4. Fiberglass tube filled with polyurethane foam
5. C-bracket
6. Support bracket
7. Stainless steel connector plate



Aestech stand at the World Architecture Festival 2022

Lisbon, Portugal

The key element of the Aestech's booth was a 4-meter high 3D arch made of solid glass. The structure consisted of 23 insulated glass units with higher stiffness of various shapes and sizes from Aestech. As a result, it had many facets arranged at different angles, which gave it a distinctive look from every angle.

No supporting frame.

Every corner has butt glazed connection.

A sash without the use of visible profiles.

Fast assembling.

aestech.com

Over the past 15 years, we have developed technologies that allow us to bring the most daring architectural ideas to life using glass. Over 100 completed projects.

2006-2010

The technology for frameless glazing based on insulated glass units with higher stiffness was introduced.

2011-2016

PIK Group, the predecessor of Aestech, was founded by a group of enthusiastic engineers. Initially, the company focused primarily on developing technical solutions and technical support.

2018-2020

During this period, the market fully embraced the frameless glazing technology. Our exclusive solutions became part of mainstream systems. We implemented a range of large-scale projects, including offices, shopping centers, gas stations, and cottages.

2021

PIK Group transformed into Aestech. The company expanded its team, adopted a new name and identity, and gained new opportunities for development.

2023

Insulated glass units with higher stiffness received several certifications from the independent laboratory ift Rosenheim.

We opened our office in Lisbon and began active collaboration with the architectural community in Portugal.

Production capacity

Today we use the production capacity of the partners, where we can produce 50 thousand square meters per year. Our leading partner is Paritet; we can produce up to 30 thousand square meters per year on its facilities.

Currently we have purchased equipment for our own production that will allow us to produce 120 thousand square meters per year.

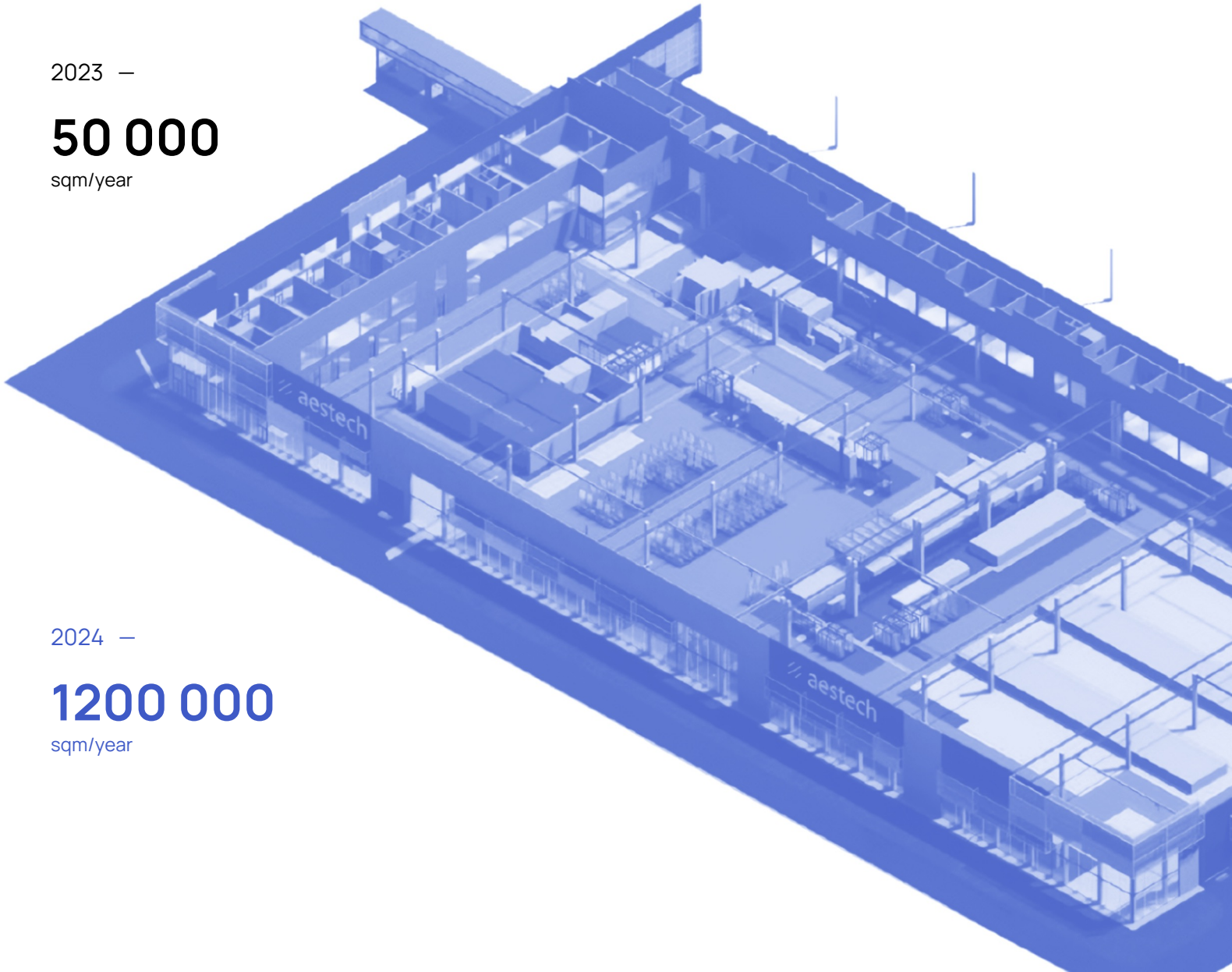
Company’s advantages

- Patented and certified products
- Over 100 implemented projects
- More than 15 years of experience
- Well-established global logistics
- Own production

2023 —

50 000

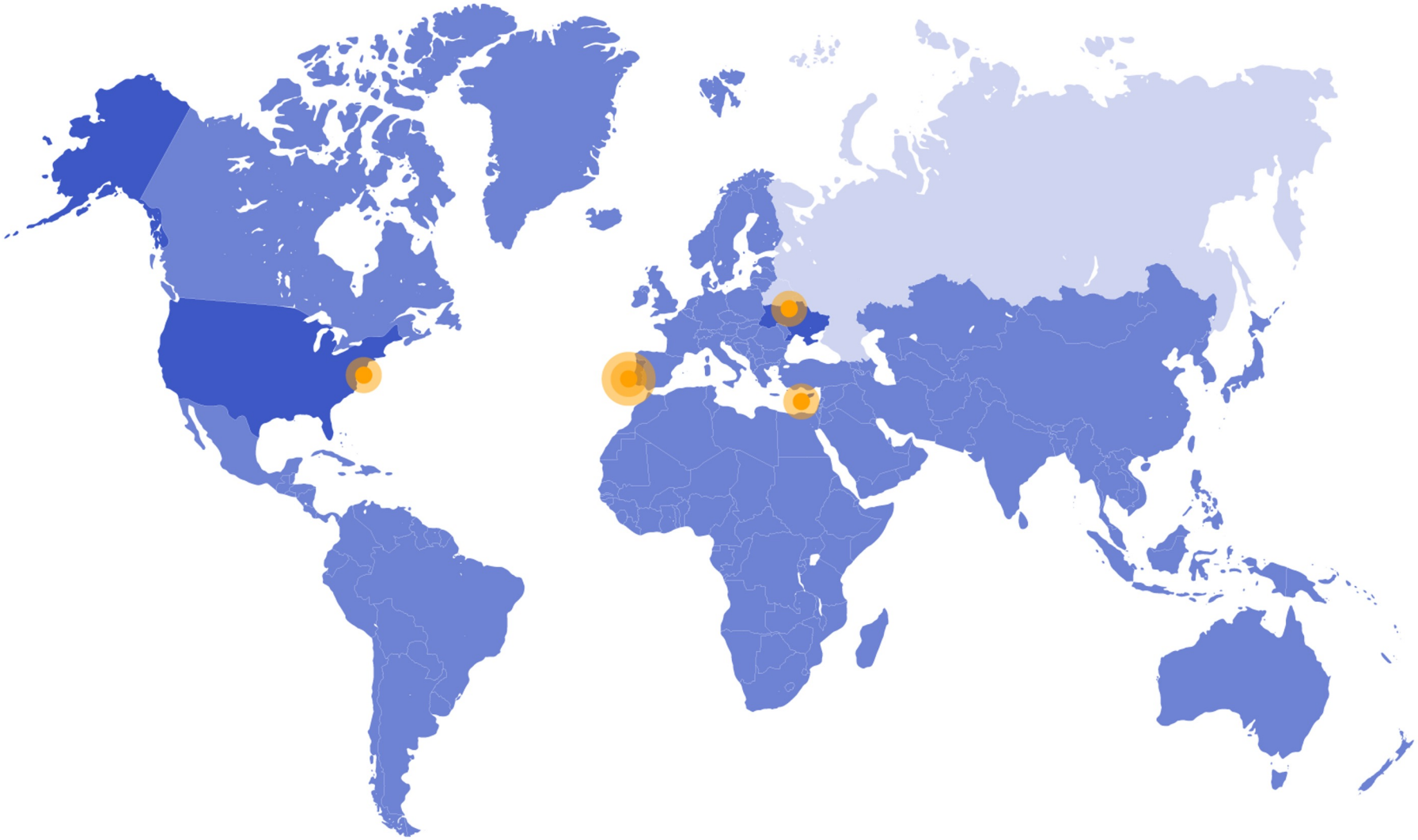
sqm/year



2024 —

1200 000

sqm/year



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