Unbeatable
energy efficient
glass curtain
wall system

Qbiss.Air

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CONTENT

INTRODUCTION

World's best-performing glass curtain wall system

Qbiss Air is a unique unitized glass curtain wall system, which uses an innovative, multi-chamber insulating core, that provides exceptional energy efficiency and living comfort.

The outstanding performance of Qbiss Air, which is available in transparent, translucent and opaque glass options, provides an unbeatable combination of thermal performance, solar heat gain, whilst allowing the maximum transmission of visible light to enter the building.

Qbiss Air best-performing glass curtain wall system:

- Day-light at maximum, it offers the highest energy efficiency available
  - **g = 0.1**
  - **U = 0.35 W/m²K**
  - **LT = 0.17**
- Unique 5 to 7 chamber unitized glass system
- Highest thermal insulation to thickness ratio
- Flush internal and external face

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SYSTEM

Qbiss Air is the only glass curtain wall system available, which uses thermodynamics to achieve unbeatable energy performance level.

Qbiss Air is designed to:

- Conserve energy [U value]
- Minimize solar gain [g value]
- Maximize light transmission [LT value]

Qbiss Air curtain wall system consists of a series of factory engineered opaque, translucent and transparent units, which are manufactured using advanced structural glazing technology that provides recessed joints throughout.

Complete answer to curtain wall systems:

- Transparent, translucent and opaque units
- Integrated substructure
- Sealing and fixing elements
- Architectural details
- Corner elements
- Integrated windows and doors elements

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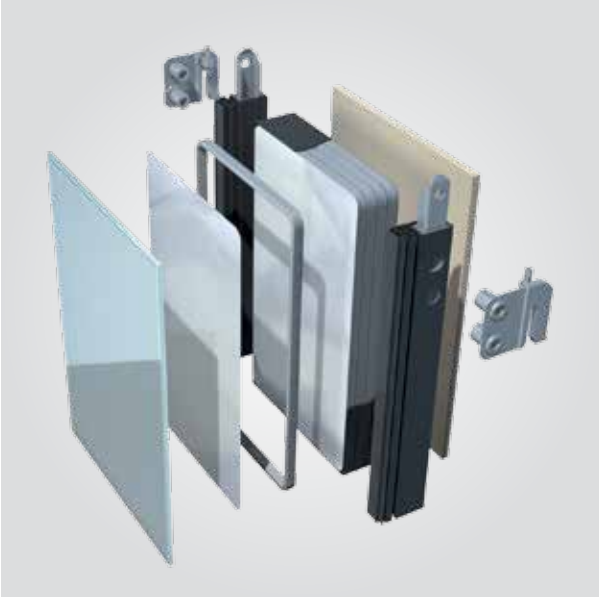
WORLD CLASS ENGINEERING

Qbiss Air was engineered to utilize the thermodynamics of convection, conduction and radiation within a series of chambers that reflects infra-red radiation and minimizes conduction between solid materials. Heat transmittance is limited by low thermal conductivity gas within a calculated volumetric space. The system has eliminated the need to use any solid insulating materials, using instead science to create the new benchmark for high performance façade engineering.

Composition & Thermodynamics

Each unit consists of an outer and inner skin, which incorporates a multi-chamber core that uses thermodynamics to set new standards in thermal performance, whilst maintaining a minimal total wall thickness that maximizes the net interior volume and floor space of the building.

Qbiss Air units are designed to self-span between floor slabs by incorporating structural profiles that eliminate the need for any secondary mullions or transoms and provide a flush external and internal face.



| Unique Qbiss Air composition

Innovative Qbiss Air system eliminates the need for:

- solid insulation
- secondary support structure
- external frames
- shading systems
- second glazing skin (double skin glazing)
- external access for installation

UNITS SELECTION

Qbiss Air is available in transparent, translucent and opaque options.

Qbiss Air unit options and combinations with integrated elements:

- Fully transparent unit
- Translucent unit
- Fully opaque unit
- Unit with window

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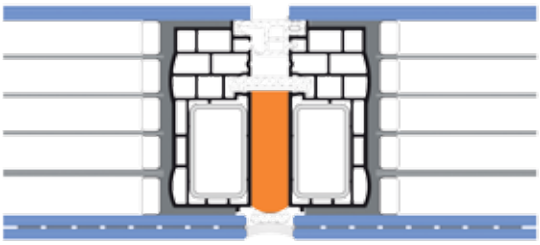
Qbiss Air transparent and translucent system

Qbiss Air, in either transparent or translucent options, is uniquely composed as a five, six or seven chamber insulating glass system to provide extremely high thermal performance, and which is at least double that achieved by triple glazing.

External skin is made of toughened or toughened laminated glass with special optical properties. Internal skin can be either a single glass plate, laminated safety glass or additionally integrated with single or double gas-filled insulating glass units (IGU).

Material composition of transparent and translucent system:

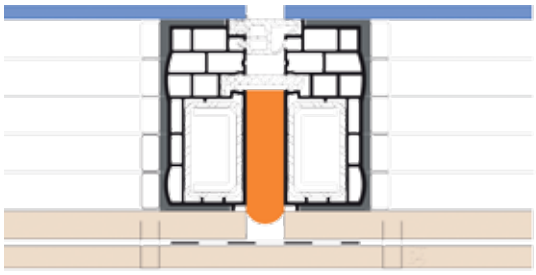


- External skin | Glass
- Internal skin | Glass
- Core | Glass with peripheral hybrid spacer bars
- Structure | Polyamide extrusion incorporating steel profile

Qbiss Air opaque

Qbiss Air opaque option is a unique five chamber insulating system integrated with exterior glass, interior gypsum skin and integrated substructure. The totally integrated gas-filled system delivers the ultimate level of thermal insulation for the highest energy efficiency, but still incorporates no solid insulation.

Material composition of opaque system:



- External skin | Glass
- Internal skin | Reinforced gypsum, additional gypsum
- Core | Aluminum foil chambers with peripheral hybrid spacer bars
- Structure | Polyamide extrusion incorporating steel profile

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Qbiss Air transparent

Unrivalled performance of transparent system:

- Energy efficiency (U value): 0.27 - 0.45 W/m^{2}K
- Solar heat gain (g value): 0.1 – 0.25
- Natural light (LT value): 15 - 35%
- Acoustics: 45 – 60 dB

Qbiss Air translucent

Unrivalled performance of translucent system:

- Energy efficiency (U value): 0.27 - 0.45 W/m^{2}K
- Solar heat gain (g value): 0.1 – 0.25
- Natural light (LT value): 15 - 35%
- Acoustics: 45 – 60 dB

Qbiss Air opaque

Unrivalled performance of opaque system:

- Energy efficiency (U value): 0.25 W/m^{2}K
- Acoustics: 46 - 60 dB
- Fire safety: EI 60 - 120

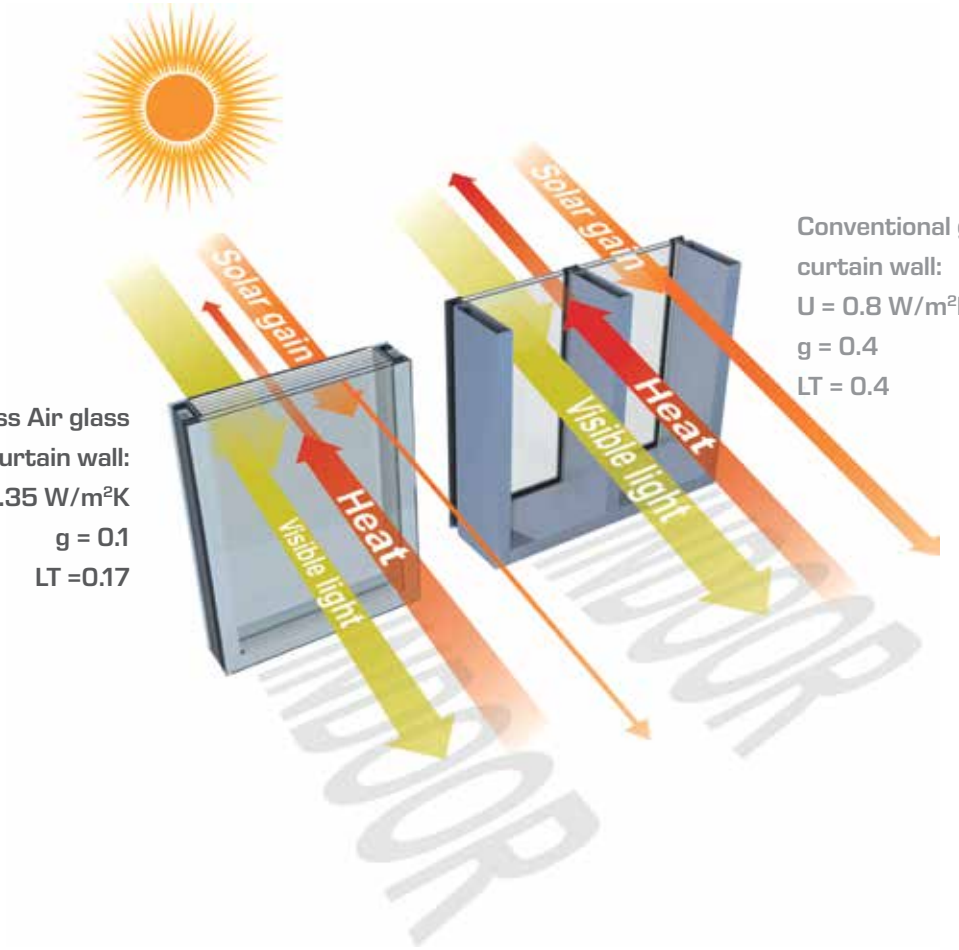
Qbiss Air unit with window

A range of fully integrated framed and structurally glazed windows are available in most standard operable venting options.

ENERGY EFFICIENCY & COMFORT

Qbiss Air is pioneering the new way of curtain walling and is the only transparent and translucent curtain wall system in the world which delivers adequate transparency and at the same time maximizes the prevention of solar heat gain and provides superior energy efficiency.

Qbiss Air transparent/translucent compared to conventional glass curtain wall (triple glazing)



Qbiss Air glass curtain wall:
U = 0.35 W/m²K
g = 0.1
LT =0.17

Conventional glass curtain wall:
U = 0.8 W/m²K
g = 0.4
LT = 0.4

Qbiss Air opaque reaches even higher level of energy efficiency, with U value as low as 0.25 W/m²K.

Efficient energy and natural light management:

- Minimize solar gain (g value)
- Conserve energy (U value)
- Maximize natural light (LT value)

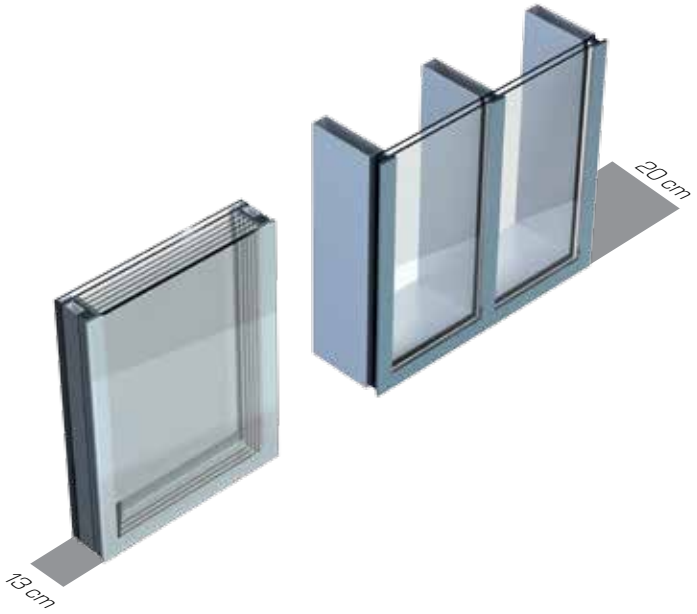
Acoustics

Qbiss Air provides excellent noise control inside a building with sound insulation levels up to 60 dB.

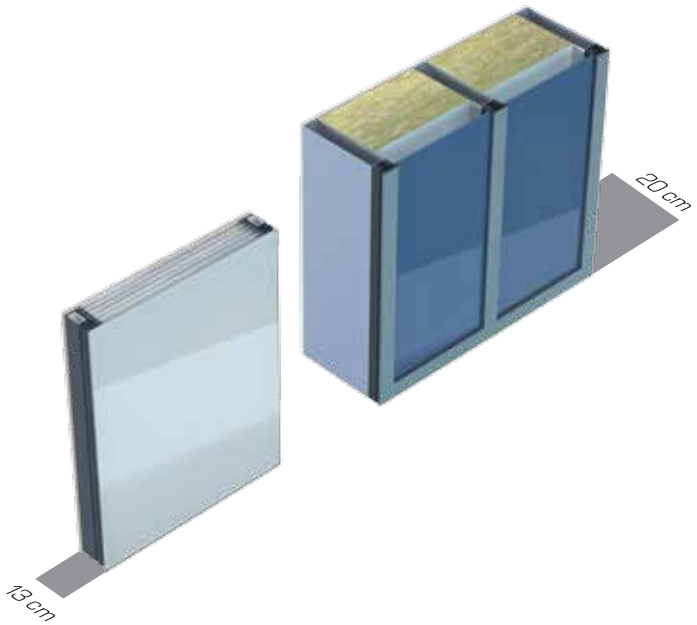
Thermal / thickness ratio

Qbiss Air was developed to provide exceptional thermal performance in a consistent minimal wall thickness which we believe is unique. All elements within the façade are designed to integrate into the system within the consistent and controlled façade zone.

Qbiss Air transparent compared to conventional glass curtain wall



Qbiss Air opaque compared to conventional glass curtain wall system with additional insulation



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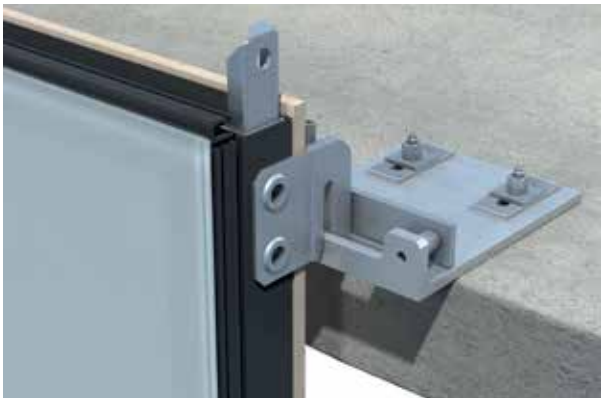
MAXIMISED INSTALLATION EFFICIENCY

Qbiss Air is designed for fast, clean and efficient installation. Based on proven modular unitized principals, each unit is installed from inside the building eliminating the need for external access. All elements of the Qbiss Air system, including all seals and accessories are designed as modular units to ensure total integration and a flush facade with recessed joints.



| Qbiss Air installation

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AESTHETICS

High aesthetics and multiple design possibilities allow Qbiss Air to meet the widest architectural ideas and aspirations as it uniforms large, structural glazed surfaces without any interruptions of the traditional frames or using any other supporting or fitting system.

Qbiss Air offers an extensive choice of decorative and design options. The standard configuration can be either transparent, translucent or opaque glass.

A variety of float, laminated, toughened, coloured and/or enamelled glass is available in addition to the option for screen and digital printed glass.

Qbiss Air - architectural curtain walling:

- Extensive choice of decorative options
- Structural, flush look – no visible frames required
- Light transmission options - transparent, translucent, opaque
- EPDM seals - sealants (silicone available for extreme climates)

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ACTIVE SUSTAINABILITY

Qbiss Air is a trend setter for the new future of sustainable construction and architecture. Qbiss Air system assures high energy efficiency and a low CO_2 footprint during the lifetime of the building, whilst also delivering a pleasant working environment. Additionally, as much as 96 % of the entire curtain wall system is recyclable as well as being constructed from environmentally and people friendly materials.

Qbiss Air assures sustainable benefits:

- Exceptional energy savings
- Unrivalled combination of key performance criteria (g, U, LT)
- Increased internal floor space
- High recyclability
- Low CO_2 emissions

ENERGY PERFORMANCE RATINGS	
Ucw 0.27 – 0.45 W/m^2K	Solar heat gain (g value) 0.10 – 0.25
ADDITIONAL PERFORMANCE RATINGS	
Light transmittance 15 – 35 %	Acoustics 45 – 60 dB
Recyclability 96 %	Water tightness 900 Pa

TECHNICAL SPECIFICATION

	Transparent/Translucent	Opaque
External skin	Glass	Glass
Internal skin	Glass	gypsum board
Insulation core system	5 chambers (5 chamber core) 6 chambers (5 chamber core + single IGU) 7 chambers (5 chamber core + double IGU)	5 chambers
Element thickness (mm)	133 - 189	133 - 137
Modular width (mm)	700 - 1250	500 - 1250
Modular length (mm)	700 - 4000	300 - 4000
Weight (kg/m^2)	75 - 130	43 - 67
U value – thermal transmittance (W/m^{2}K) [EN ISO 6946], across the whole modular unit	0.27 – 0.45 for the complete system at max. unit size	0.25 for the complete system at max. unit size
U value – thermal transmittance (W/m^{2}K) [EN ISO 6946], center of glass value	0.19 (7 chambers)	0.17
g value – solar heat gain	0.1 – 0.25	/
LT - light transmittance (%)	15 - 35	/
Rw – sound insulation (dB) [EN ISO 140-3]	45 - 60*	46 - 60*
Water permeability (resistance to driving rain under pulsating pressure) [EN 12865]	900 - 1500 Pa	900 - 1500 Pa
Airtightness	1.2 m^3/ m^2/hr @50 Pa	1.2 m^3/ m^2/hr @50 Pa
Wind load resistance (kPa)	1.25 at L/400 at max. unit size	1.25 at L/400 at max. unit size
Fire resistance class [EN 13501-2]	/	EI 60 - EI 120*
Recyclability (%)	96	96

STS-11/0023 National Technical Approval

* contact technical support

Energy efficiency · Living comfort · Natural illumination · Sound insulation · Fire Safety

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SUPPORT AND CONSULTING

From an initial idea to the implementation: Qbiss team supports you throughout every phase of your architectural project. Qbiss expert team is a partner you can count on to provide comprehensive support throughout the entire duration of your project: from planning and purchasing to project management and creation, as well as flawless implementation.

Individual solutions: Qbiss expert team provides you with special product solutions designed to perfectly suit your project.

Support and consulting:
t: + 386 (0)7 34 60 328
e: tech.info@trimo.si

COMPANY PROFILE

Qbiss Air is a product brand of Trimo.

Trimo is one of the leading providers of building envelope solutions. With over 50 years of experience and worldwide realized projects, its engineering, production and sales teams provide efficient, innovative and sustainable solutions to meet your demands.

Trimo sells its products and services under its own brand across more than 50 countries worldwide. Trimo has a sales network in more than 25 countries and has production facilities in Slovenia, Serbia, Russia and the United Arab Emirates.

Trimo

| Innovation centre

| World class technologies

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PROJECTS

Kindergarten Mavrica

Location: Slovenia
Year of completion: 2011
Architect: Princic + Partners
Product: Qbiss Air

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Exibition Pavilion

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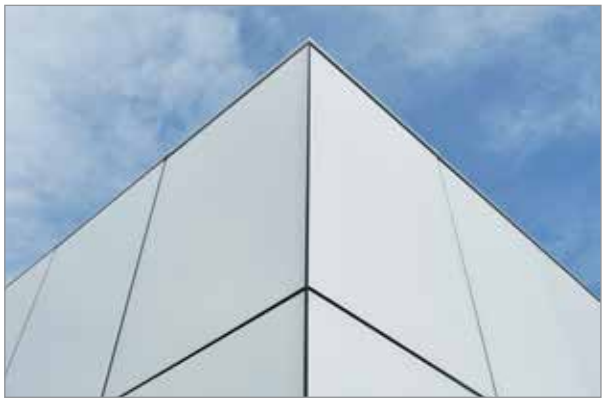

Location: Slovenia
Year of completion: 2012
Architect: Qbiss design team
Product: Qbiss Air

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Office Building

Project concept
Norway
Product: Qbiss Air

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