

# AIR TECH NOLOGY

Gres  
Natural  
Glass  
GFRC Plus  
Mosaic  
Brick

DOLCE & GABBANA

دولتشي اند غابانا  
DOLCE & GABBANA

ROLEX

ROLEX



**GammaStone**

Architectural & Design Evolutions

**GammaStone®**, the leading brand in manufacturing large format stone, porcelain, glass, GFRC Plus, mosaic and brick, uses the most sophisticated lightweight panelized system in the world. GammaStone's patented Air System is the result of our profound knowledge of the natural stone industry and our commitment to modern and dynamic structures.



# INDEX

- 2. EVOLUTION IS OUR KEYWORD
- 4. THE WORLD'S SAFEST LIGHTENED LIGHTWEIGHT PANELS
- 6. GAMMASTONE AIR TECHNOLOGY
- 8. PANELS OF SURPRISING LIGHTNESS
- 10. LARGE-FORMAT SIZE PANELS (UP TO 4200X1600 MM)
- 12. ARCHITECTURAL MONOLITHIC ELEMENTS
- 14. REFINEMENT, QUALITY, AND SOLUTIONS
- 16. INNOVATIVE AND REVOLUTIONARY BUILDING SYSTEMS
- 18. PROJECTS IN THE WORLD
  - 20. The Market Luxury Outlet
  - 32. Residential Building in Milan
  - 42. Matera Railway Station
  - 52. Symbiosis, Milan
  - 64. Richard Tower
  - 72. Reale Mutua Assicurazioni
  - 84. New D&G Store
  - 94. Libeskind Tower
  - 104. Essex Crossing 3 - Nyc
  - 114. Coop - Arona Center
  - 126. Chestnut Tower, Philadelphia
  - 134. India Private House
  - 144. 140 west 24th St, New York
  - 152. Residence Inn
  - 154. Student Residence
  - 156. Student Residence
  - 158. Lincoln Center, New York
  - 164. Boutique Prada
  - 166. Cavendish House
  - 168. Virgin Hotel, Dallas
  - 170. Gucci Store, Palm Desert CA
  - 172. Cepsa Service Station
  - 174. Piemonte Region Headquarters
  - 176. Unicredit Bank
  - 177. Local Paleontological Museum of Asti
  - 178. Shopping Mall

## PANEL SIZES AND FINISHING

- 180. GRES AIR
- 190. NATURAL AIR
- 224. GLASS AIR
- 230. GFRC PLUS AIR
- 238. MOSAIC AIR
- 244. BRICK AIR
- 254. TECHNICAL BOOKLET

# EVOLUTION IS OUR KEYWORD

Quality, Versatility and Performance



GammaStone® is synonymous with creativity and excellence, the qualities that stem from our 50 years of experience in the stone industry and our tireless dedication in realizing high performance products. Clients from all over the world have certified our products in terms of quality, versatility, reliability and performance. With its extensive experience in the stone industry, our company highlights the materials and brings out the utmost quality using modern technology and engineering. Our panelized solutions can be made with a variety of materials such as natural stone, porcelain, glass, GFRC Plus, mosaic and brick. Each solution is characterized by compactness, excellent technical characteristics, extraordinary resistance and incomparable aesthetics that complement any architectural style. The countless number of Air Technology solutions fulfil any taste's desire; the panels are suitable for the outdoor and indoor of all classic and modern projects.

Our large-format panels are manufactured using the most sophisticated production technology in the world. The company is among the first ISO 9001 certified by IMQ (Istituto Italiano del Marchio di Qualità), Italy's most important certification body and a European leader in assessments and laboratory testing for safety, quality, and sustainability. GammaStone products are manufactured in compliance with the strict requirements of EOTA (European Organization for Technical Approval), the European institute that certifies product performance and sustainability.

GammaStone products have been nominated and granted with numerous awards based on their originality, innovation and functionality. Research and development have been the key parameters to succeed in the production of large-format lightweight panels. GammaStone is well-known for developing Creative and industry-leading solutions in cladding. New product ideas, processes, and technologies are developed everyday in GammaStone laboratories, which has enabled us to emerge as market leaders.

Fastweb Symbiosis  
Milan (Italy)

# THE WORLD'S SAFEST LIGHTENED LIGHTWEIGHT PANELS

Over 200 tests in the bestleading European and American laboratories

The company has the ISO 9001 certification issued by IMQ (Istituto Italiano del Marchio di Qualità), Italy's most important certification body and a European leader in assessments and laboratory testing for safety, quality, and sustainability. Our products are a combination of visual, technical and design quality flawlessness. The reliability and aesthetic perfection of our surfaces and facades are now an undisputed fact, accredited by important international certifications for the full range of products.



## PANEL GAMMASTONE AIR

All GammaStone AIR panels (glass, stone Natural and porcelain tiles) have undergone the rigorous testing required by international regulations. The performance results are striking, all GammaStone AIR products have excellent design life and performance characteristics. The results also confirm that GammaStone AIR panels which are installed outdoor can resist in the most extreme conditions.

## GAMMASTONE AIR FAÇADE SYSTEM

To ensure maximum safety, the GammaStone AIR façades have been subjected to rigorous tests required by the ETAG standard guidelines, conducted at the Istituto Giordano. The sample under test is a portion of the ventilated façade with concealed hangers which consists of the supporting structure in extruded aluminum profiles and brackets, an external cladding of 3000x1000 mm sandwich panels with 15mm thickness finished with gres porcelain tiles.

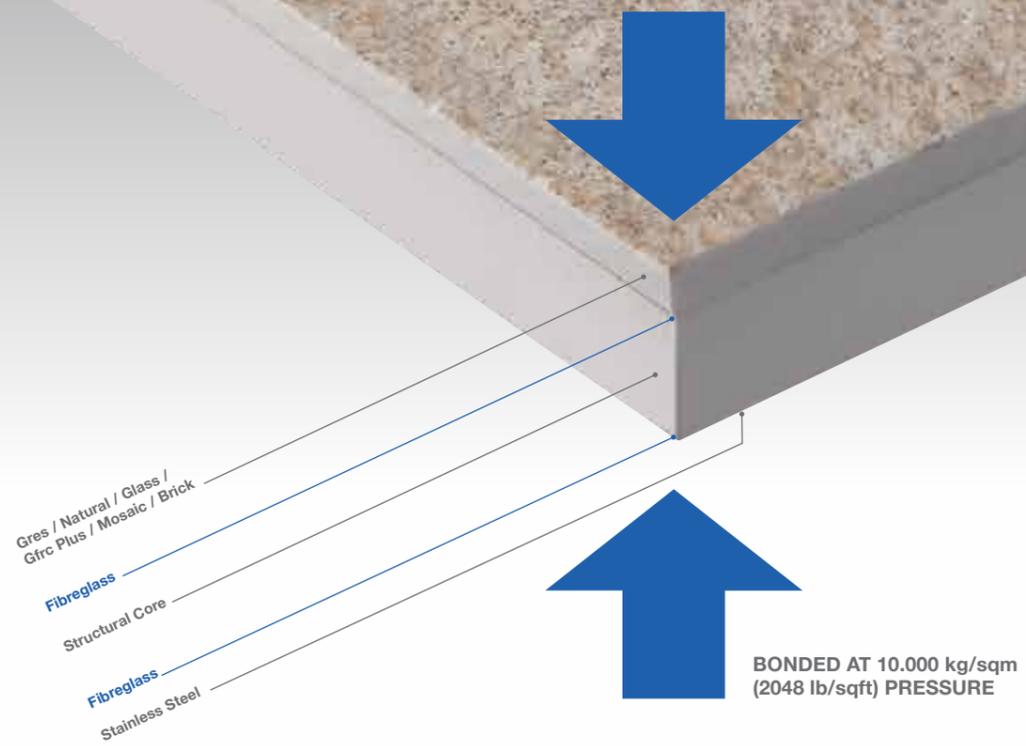
## WIND LOAD RESISTANCE

The test was performed in accordance with the EOTA standard guideline (European Organisation/Organization for Technical Approvals) ETAG 034-1:2012 April 2012 "Guideline for European technical approval of kits for external wall claddings - Part I: Ventilating cladding kits comprising cladding components and associated fixings." The sample was mounted on the test bench and was subjected to the test of resistance to wind load in depression, with measurement of the deformations under load and detection of residual deformations according to paragraph 5.4.1 "Wind load resistance" ETAG 034-1 : 2012. The test results proved to be exceptional in depression 4610 Pa (470 kg/sqm). **TEST REPORT No. 309028**

## IMPACT STRENGTH

The test was performed in accordance with the standard guidelines: - ETAG 034-1:2012 April 2012 "Guideline for European technical approval of kits for external wall claddings - Part I: Ventilating cladding kits comprising cladding components and associated fixings - UNI EN 14019:2004 01/11/2004 of Curtain walling - Resistance to impact - Performance requirements Also this test proved extraordinary results. The panel resists to impacts by of 0.5 and 1 kg hard body and 50 kg soft body. **TEST REPORT No. 309029**





**SUPERIOR AESTHETIC, TECHNICAL AND DESIGN QUALITIES, DESIGNED TO ENDURE OVER TIME**

# GAMMASTONE AIR TECHNOLOGY

GammaStone AIR patented panels are produced by state-of-the-art manufacturing equipment that enables the production of lightweight panels in natural stone, porcelain, glass, GFRC Plus, mosaic, and brick in large-format sizes up to 4200x1500mm (approx. 13x5 feet). GammaStone AIR panels are extremely lightweight and have very high resistance to impact, bending, and compression from the use of innovative materials that are used in the aerospace industry. GammaStone AIR panels represent a state-of-the-art solution that guarantees high-performance standards and unparalleled aesthetic beauty. **The GammaStone AIR system enables the designer to specify large-format panels with confidence. The panels are anchored mechanically allowing simple attachment to the substrate.** The resistance to wind load is greatly superior to any technical requirement imposed by the current regulations even in climatic zones subject to weather extremes such as monsoons and hurricanes. The GammaStone AIR product is protected by patent (Patent No. RM2013A000068).

- |   |   |  |
|---|---|--|
|  Large format up to 4200x1500 mm                   |  Acoustic insulation and protection from water               |  Impact Resistant                      |
|  Lightweight (weight of 14 kg/sqm)                 |  Re-qualification of buildings                               |  Bending Resistant                    |
|  A concealed or visible fix solution               |  Functionality and Aesthetics                                |  Resistant to thermal shocks          |
|  Safety (maximum safety with mechanical anchorage) |  Easy to maintain  |  Resistance in Neutral Salt Spray NSS |
|  Easy Handling                                     |  Panel edges of the same tone as the panelling material      |  Resistant to hurricanes              |
|  Easy Installation                                 |  Minimal vertical and horizontal joints of 5 mm              |  High Performance                     |
|  Energy Saving                                     |  Monolithic effect (variable finishing for external corners) |  Customisable Solutions               |
|  Insulation from atmospheric agents                |  Easy to cut and trim  |  Monolithic architectural elements    |

# PANELS OF SURPRISING LIGHTNESS



**Lightweight**  
(weight of 14 kg/sqm)



**Bending Resistant**

The structural core foam, which is mostly used for aerospace applications, provides the GammaStone AIR ventilated façade system lightness which is impossible to achieve with other material. **GammaStone AIR panels have excellent technical characteristics, which enable extraordinary finishing finishes and are increasingly being incorporated in grand projects by internationally renowned architects and designers who always experiment with new aesthetic and architectural solutions.** GammaStone AIR system is suitable for any type of structure and purpose of Interior and exterior use.

## **HIGH RESISTANCE TO IMPACTS, BENDING AND COMPRESSION**

thank to use of excellent and innovative materials

## **STATE-OF-THE-ART SOLUTION THAT GUARANTEES HIGH PERFORMANCE STANDARDS**

offers an unparalleled aesthetic beauty

## **EXTREMELY LIGHT SLABS**

thanks to the stratification pressed to 10,000 kg/sqm with the structural core that makes the panel even more compact and elastic

## **EASY INSTALLATION COMPARED TO OTHER PRODUCTS**

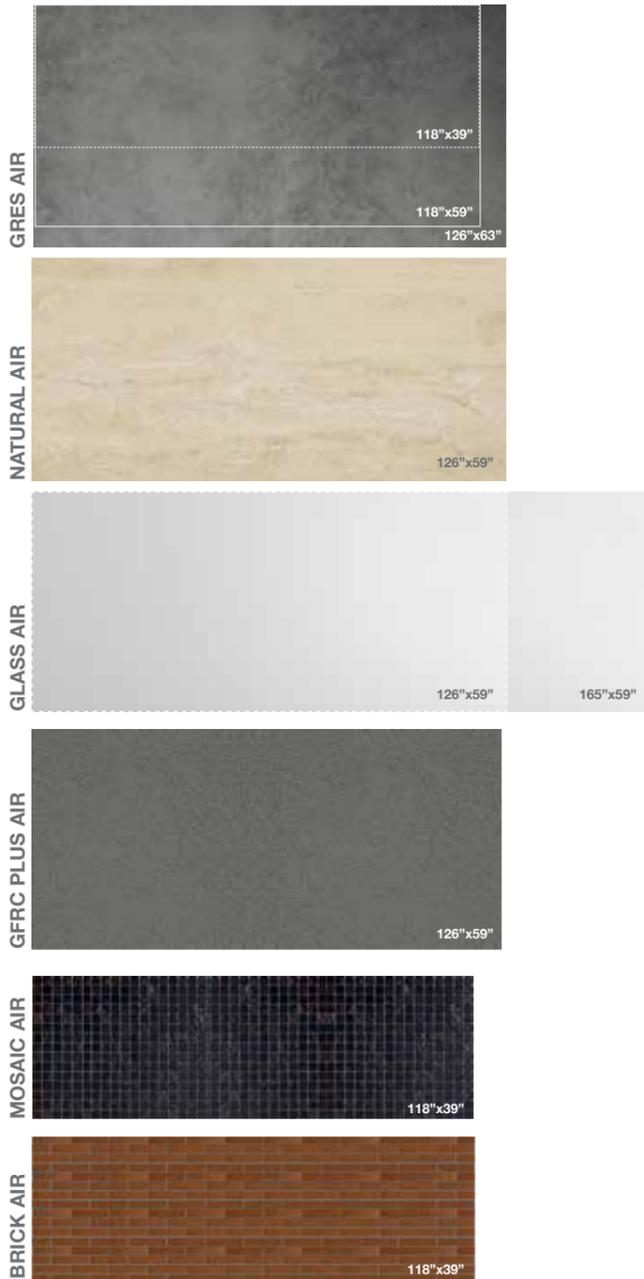
A result of the lightness of the panels

**Research and development are the keys factors to succeed of producing large-sized format lightweight panels. GammaStone is well-known as the pioneer of the best solutions for the operators of the stone field. New product ideas, processes, and technologies are developed in the GammaStone laboratories, which enable them to emerge as leaders in the market.**

# LARGE-FORMAT SIZE PANELS (up to 4200x1600 mm)



Large-format and surprisingly lightweight panels are entirely assembled in our factory and are installed with ease using the most common hanging systems. GammaStone AIR panel represents an effective and extremely valid solution referring to architectural aspects for the **cladding of structural elements** such as steel girders and pillars or reinforced concrete, as well for the realization of volumetric elements on building façades.



# ARCHITECTURAL MONOLITHIC ELEMENTS

state-of-the-art solutions



The GammaStone AIR system enables the designers to choose large-format lightweight panels with confidence. The panels are anchored mechanically either with concealed or visible fixings allowing simple attachment to the substrate. **The main feature of GammaStone AIR system is the high level of workability and usage flexibility;** the panels can be cut with different angles, glued with structural epoxy adhesives and reinforced by metal angle forming a single monolithic architectural element able to meet the most varied aesthetic and functional requirements of the buildings. These unique panels allow us to manufacture false beams or columns with complex and even irregular shapes or revitalize existing buildings with a new aesthetics. These items are manufactured entirely in our factory and delivered ready for installation on site.



# QUALITY AND SOLUTIONS REFINEMENT

extraordinary finishes



## NATURAL AIR

Natural stones give the buildings a beauty that defies the centuries, emitting magnificence and sophistication. The wide range of marble, granite, travertine other natural stones, and the various types of processing enable the fulfilment of every architectural requirement. The Natural Air types are: Granite, Marble, travertine and limestone. The choice of material depends on the characteristics of the project. The question is: "Which natural stone is best suited to my needs?" And

the answers to the question can be found in the vast and various list of products which we have.

## GRES AIR

GammaStone AIR large size porcelain gres panel is a high technology product that fulfils all architectural design requirements as well as represents a fundamental element of furnishing. GammaStone uses only the high quality porcelain gres. GammaStone porcelain gres is a compact ceramic paste, which is

obtained from the process of sintering at temperatures around 1200-1400°C, until reaching a non-porous and waterproof vitrification.

Porcelain gres guarantees optimal resistance to scratches, wear and tear, UV rays, stains, and mould.

## GLASS AIR

Glass with its timeless beauty and extreme flexibility of use gives elegance to buildings. The wide selection of colors, the various compositions and processes

meet all architecture requirements and allow endless customization. Our glass suppliers are the most important glass manufacturers in the world, which enable us to offer multiple solutions: varnished, reflecting, screen-printed glass and more.

## GFRC PLUS AIR

The GammaStone GFRC Plus AIR solution is composed of ultra-thin high-performance concrete reinforced with amorphous metal fibers. The panel offers

self-cleaning and photocatalytic characteristics thanks to the TX Active ingredient. It allows designers to customize both the color and surface finish.

## MOSAIC AIR

The GammaStone Mosaic AIR solution allows mechanical installation of ceramic or glass mosaic with the advantage of fast installation and beautiful aesthetics. The panel is supplied with epoxy resins within the joints and ready for installation.

The joint between panels is designed to provide a unique-mosaic effect on the entire façade.

## BRICK AIR

The GammaStone Brick AIR solution allows dry installation of Klinker or porcelain bricks with advantages of fast installation and beautiful aesthetics. The panel is supplied ready for installation. The joints between panels are designed to guarantee a unique effect on the entire façade.

GRES AIR



archiproducts  
DESIGN AWARDS  
—  
WINNER 2018

# INNOVATIVE AND REVOLUTIONARY BUILDING SYSTEMS

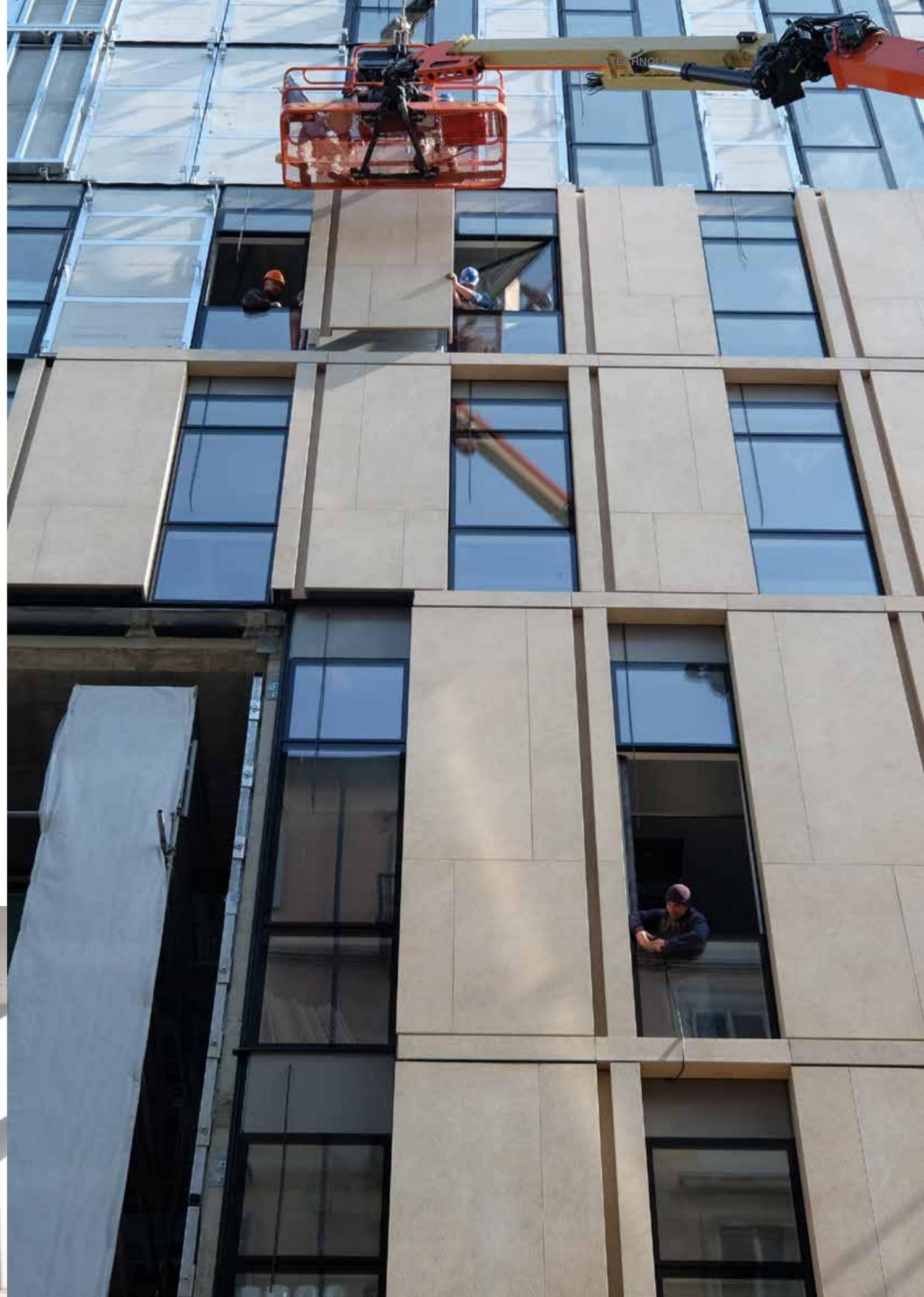
exterior and interior application

- EXTERIORS APPLICATIONS**
- VENTILATED FAÇADES
  - MICROVENTILATED FAÇADE
  - CURTAIN WALL
  - CEILINGS

- INTERIORS APPLICATIONS**
- CLADDING
  - DIVIDING WALLS
  - CEILINGS

GammaStone AIR panels have excellent technical characteristics that enable extraordinary finishes which are increasingly being incorporated in grand projects by internationally renowned architects and designers who incorporate new aesthetic and architectural solutions.

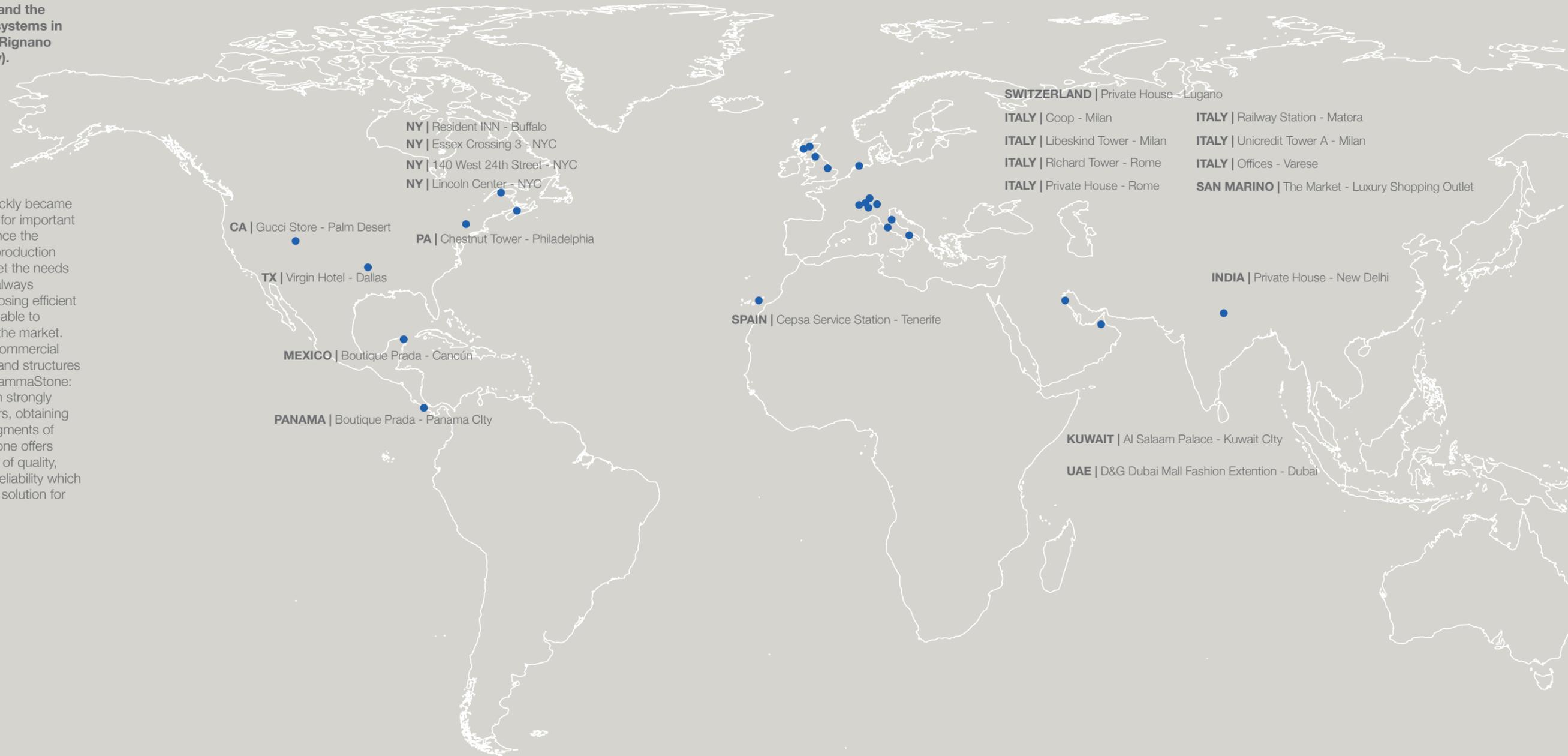
GAMMASTONE AIR SYSTEM IS SUITABLE FOR ANY TYPE OF STRUCTURE AND PURPOSE OF INTERIOR AND EXTERIOR USE



# PROJECTS IN THE WORLD

**GammaStone, leader in the manufacturing of its own large-format panels and the most sophisticated systems in the world located in Rignano Flaminio (Rome, Italy).**

The Air-Technology quickly became one of the top choices for important and luxury projects. Since the beginning, the strong production ability is inclined to meet the needs of the sector which is always changing, always proposing efficient and modern solutions, able to anticipate the trend of the market. For this reason many commercial and touristic buildings and structures have been choosing GammaStone: the business unit which strongly grew up in the last years, obtaining credibility and large segments of the market. GammaStone offers ideal solutions in terms of quality, design, versatility and reliability which guarantees the perfect solution for custom made projects.



- UK** | Greenhead College - Huddersfield
- UK** | Student Residence - Glasgow, Scotland
- UK** | Student Residence - Edinburgh, Scotland
- UK** | Cavendish House - Norwich
- UK** | Student Residence VITA - Newcastle
- NETHERLANDS** | Boutique Prada - Amsterdam

- ITALY** | Residential Building - Milan
- ITALY** | Symbiosis - Milan
- ITALY** | Reale Mutua Assicurazioni Offices - Turin
- ITALY** | Piedmont Region Headquarters - Turin
- ITALY** | CR Park Shopping Center - Cremona
- ITALY** | Museo Paleontologico Territoriale dell' Astigiano - Asti

- SWITZERLAND** | Private House - Lugano
- ITALY** | Coop - Milan
- ITALY** | Libeskind Tower - Milan
- ITALY** | Richard Tower - Rome
- ITALY** | Private House - Rome
- ITALY** | Railway Station - Matera
- ITALY** | Unicredit Tower A - Milan
- ITALY** | Offices - Varese
- SAN MARINO** | The Market - Luxury Shopping Outlet

- SPAIN** | Cepsa Service Station - Tenerife
- INDIA** | Private House - New Delhi
- KUWAIT** | Al Salaam Palace - Kuwait City
- UAE** | D&G Dubai Mall Fashion Extension - Dubai

**NATURAL AIR**



GammaStone NATURAL AIR  
Vicenza Stone

# THE MARKET LUXURY OUTLET

Luxury shopping center

ARCHITECTURAL DESIGN:  
**One Works**

GammaStone Natural AIR  
Vicenza Stone

The Market -  
Luxury Shopping Outlet  
San Marino  
43°55'55.24"N  
12°26'54.42"E





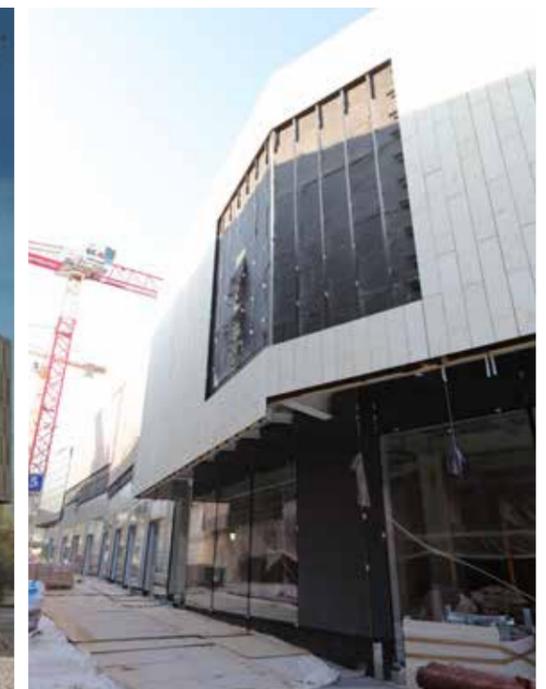
The Market – a luxury shopping center in the Republic of San Marino – will feature the Natural AIR system with Vicenza stone to achieve the architect’s unique vision, incorporating perforations, reliefs and other detailed elements. This large development consists of multiple buildings that wind along the site’s natural topography.

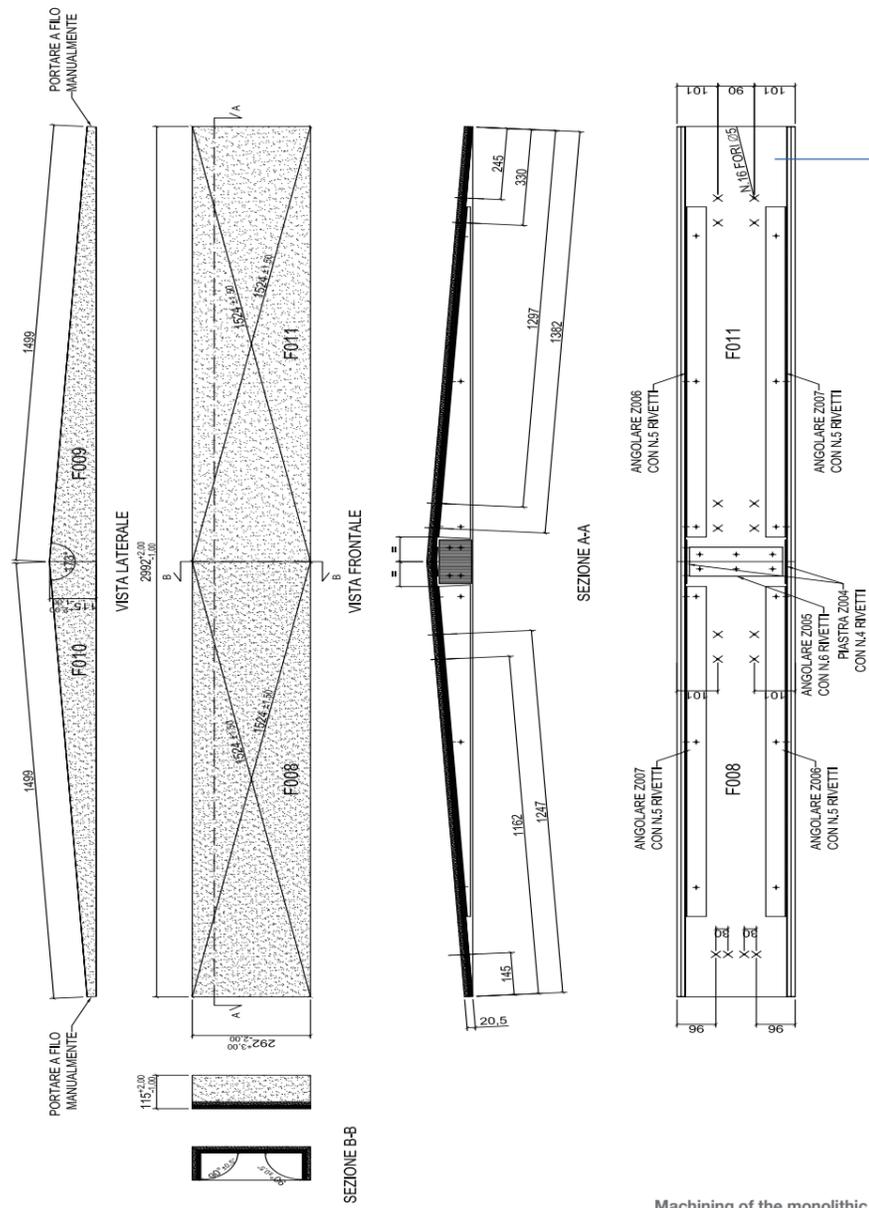




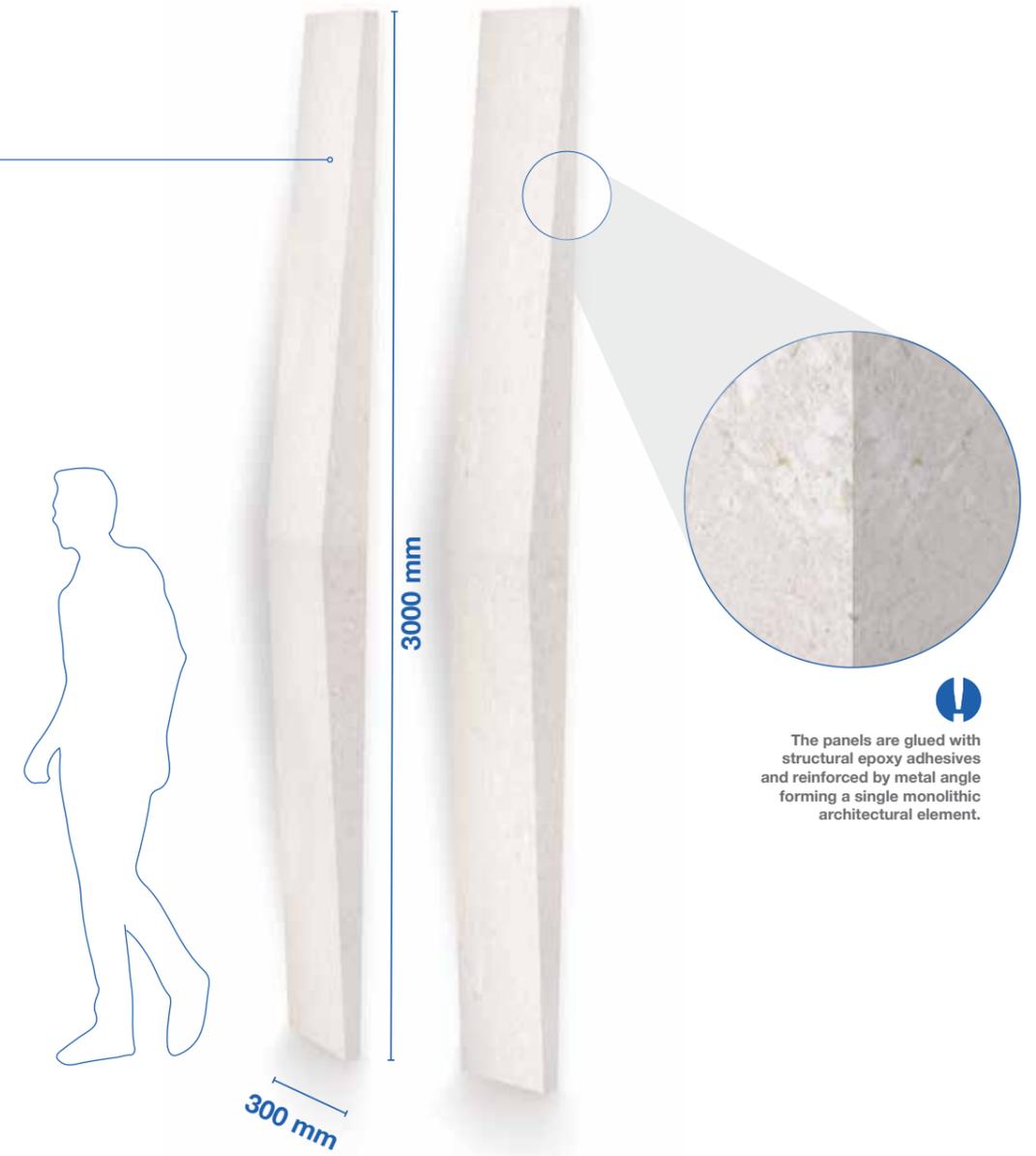
On an area of 25,000 square meters, a modern architecture develops that is respectful of the context of San Marino: shapes, materials and colors reflect those characteristic of the historic center of the capital. Respectful also of the environment: planning and construction are planned in accordance with the very strict international BREEAM certification. In addition to the variation of materials, the external facade towards the valley is volumetrically articulated through slight deviations between the different parts.

This device underlines the massive nature of the intervention and allows natural and artificial light to make the facade vibrate along its entire length. Also in the design of the settlement system, its shape and the shape of the individual buildings, simulation models have been used that have allowed us to optimize the opportunities offered by natural agents such as wind, sun and shade as well as respecting all the other technical and hygienic aspects.





Machining of the monolithic element in the company

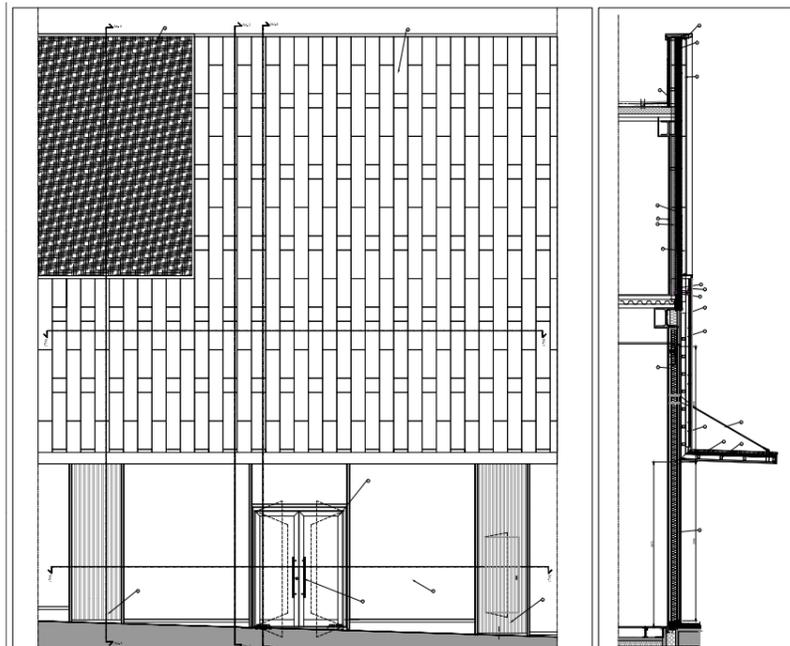


  
 The panels are glued with structural epoxy adhesives and reinforced by metal angle forming a single monolithic architectural element.

## MONOLITHIC ARCHITECTURAL ELEMENTS

The Luxury Shopping Outlet THE MARKET will be on the northeastern border of the Republic of San Marino with the GammaStone Natural AIR façades in Vicenza stone differentiated through perforations, which reliefs to enrich the general vision of architecture. The facade cladding of the project has a slight diagonal slope aligned with hill around it. The panels are anchored

mechanically either with concealed or visible fixings allowing simple attachment to the substrate. The fixing structure's resistance to wind load is greatly superior to any Technical requirement imposed by the current regulations even in climatic zones subjected to weathering extremes such as monsoons and hurricanes. GammaStone AIR is protected by patent.

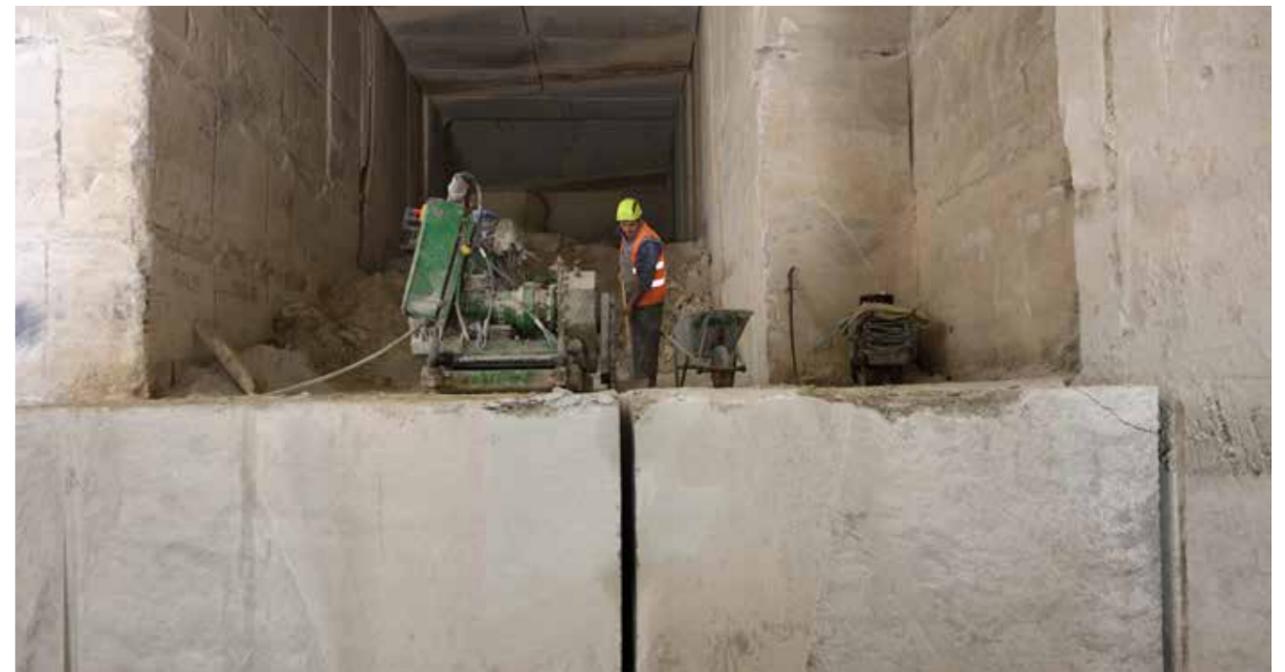


Prospectus Facade  
Type A

Section A-A



Ashlar



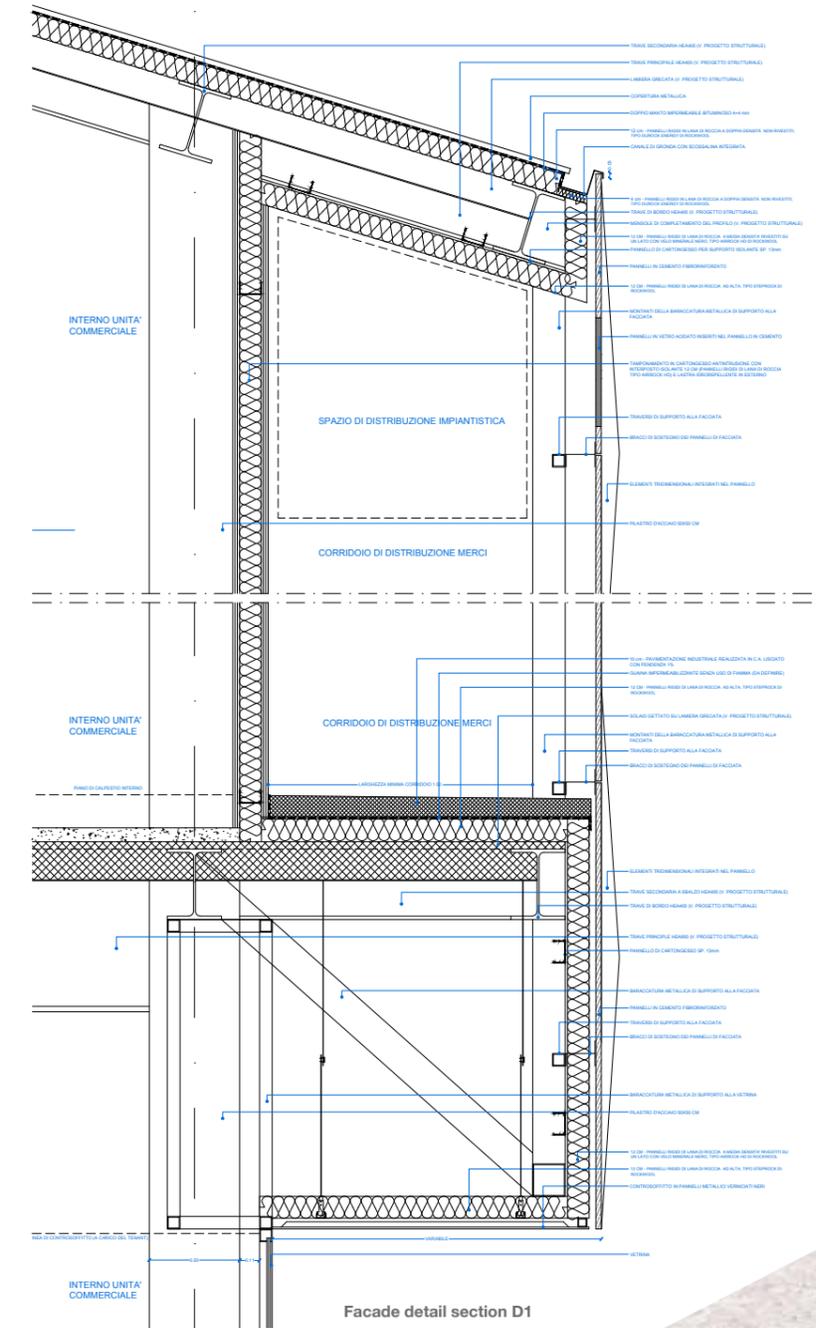


Facade Type P1

Facade Type P2

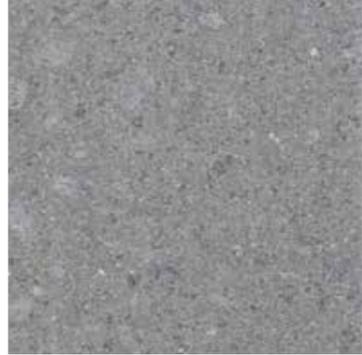
Facade Type P3

Our production is characterized by quality artisan finishing which has made possible by an experienced and professional team. An innovative solution, in which GammaStone demonstrated talent and passion. The strategy of GammaStone is to pre-assemble all the elements in our factory, leaving the workers only the task of installing them on the substructure in the building site. This has significantly reduced the installation time and guaranteed an impeccable final result.



Facade detail section D1

## NATURAL AIR



GammaStone NATURAL AIR  
Peperin



GammaStone NATURAL AIR  
Basalt

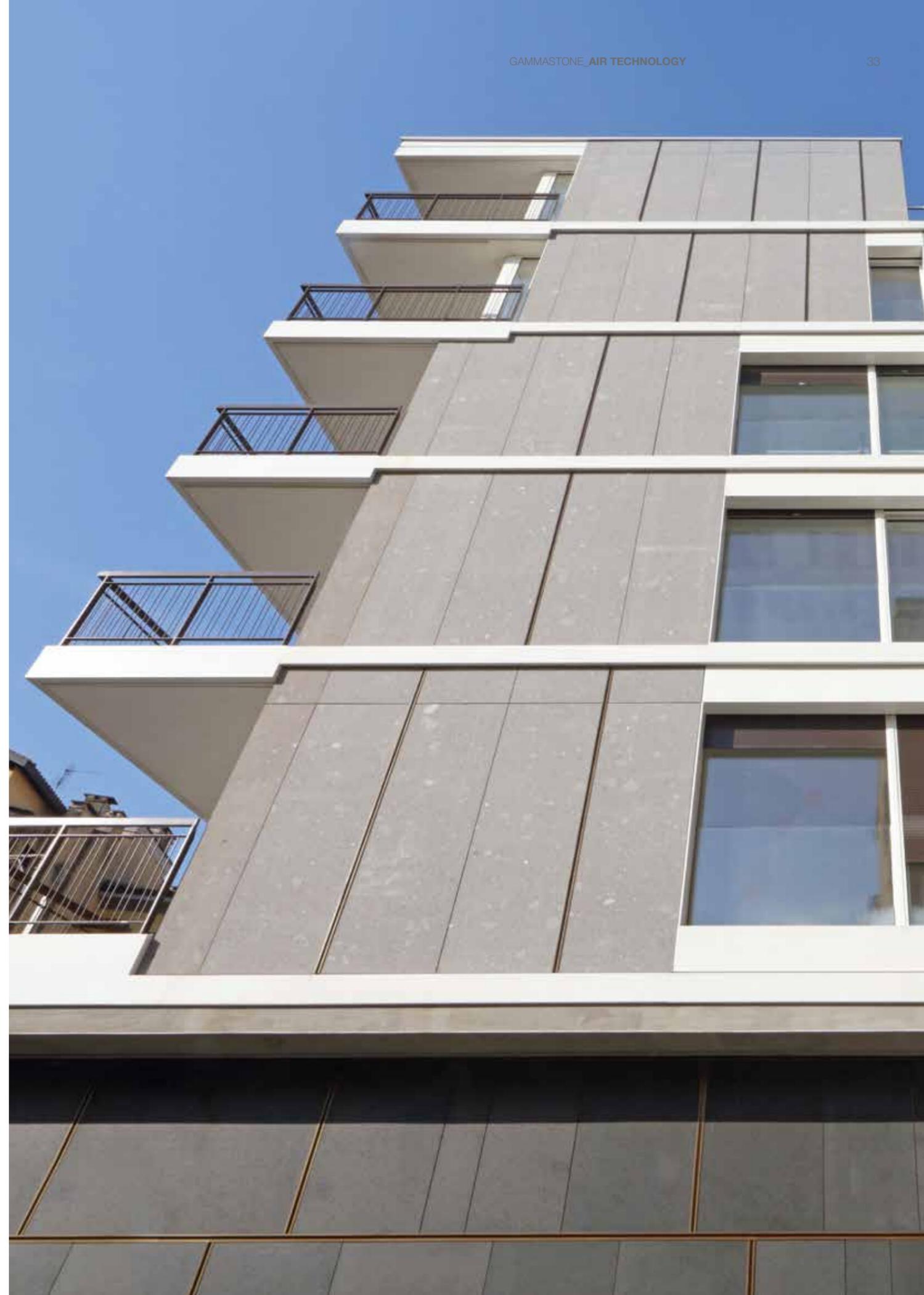
# RESIDENTIAL BUILDING IN MILAN

## External façade cladding

ARCHITECTURAL DESIGN:  
**Carlo Donati Studio**

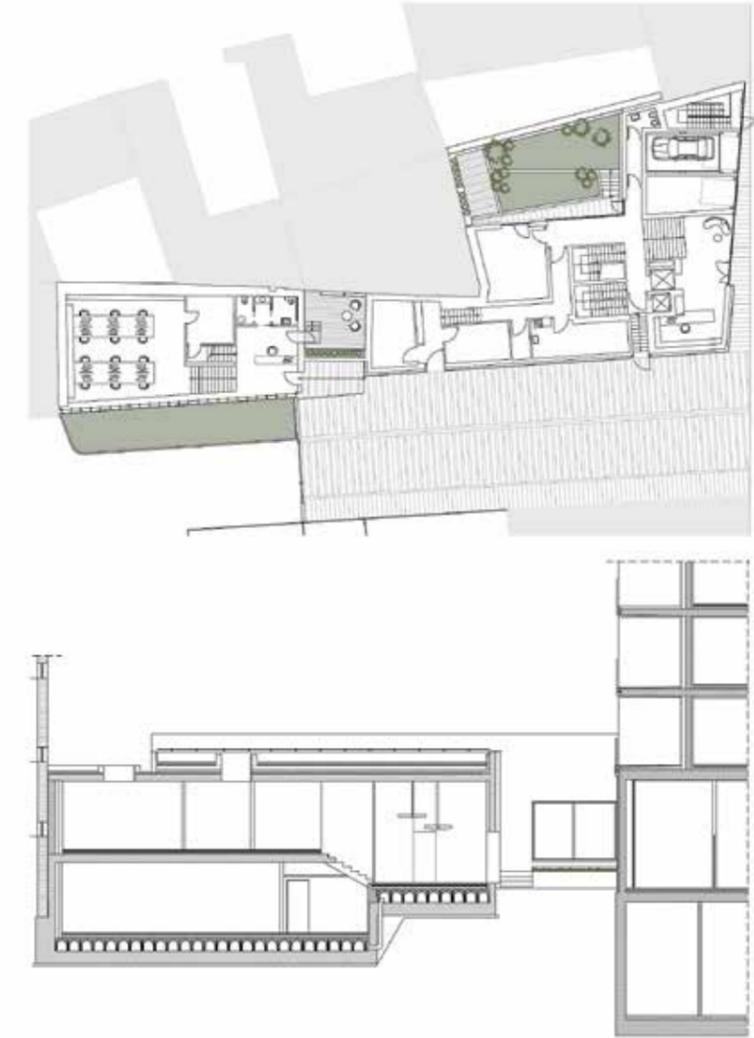
GammaStone NATURAL AIR  
**Peperino and Basalt**

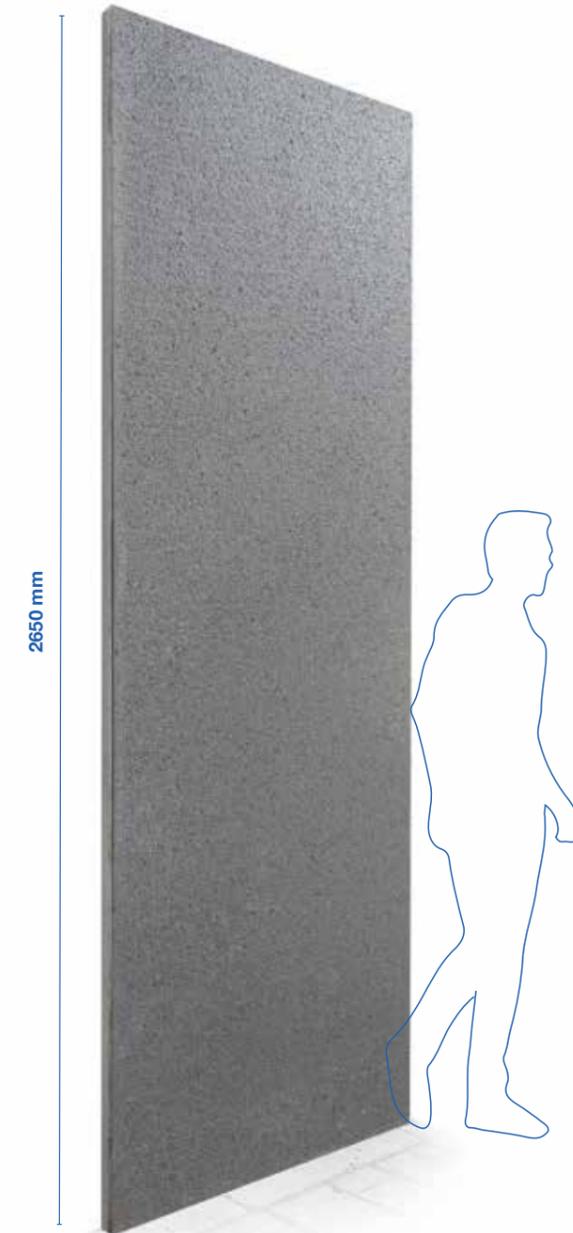
Residential Building,  
Palermo Street, Milan  
45°27'50.98"N - 9°11'25.21"E





GammaStone helps making a reserved and silent area shine thanks to the external façade cladding of a new building for luxury residences located in the central Via Palermo - Milan, in the heart of the elegant Brera. The building stands on a lot of rather complicated geometry, where in the past it was an abandoned scrub. The redevelopment of the area has been made through a meticulous research of materials and colors, that interact perfectly with the language of historical Milan, showing particular care for the green, which becomes a significant element of the entire project. The building is also characterized by bright apartments, thanks to the large windows and slightly off-axis corner balconies, with construction systems oriented to maximum sustainability. The ultralight large size slabs by GammaStone Natural AIR in Basalt and Peperino follow one another along the façade with extreme regularity, setting a perfect purposely studied game of joints and alternations.





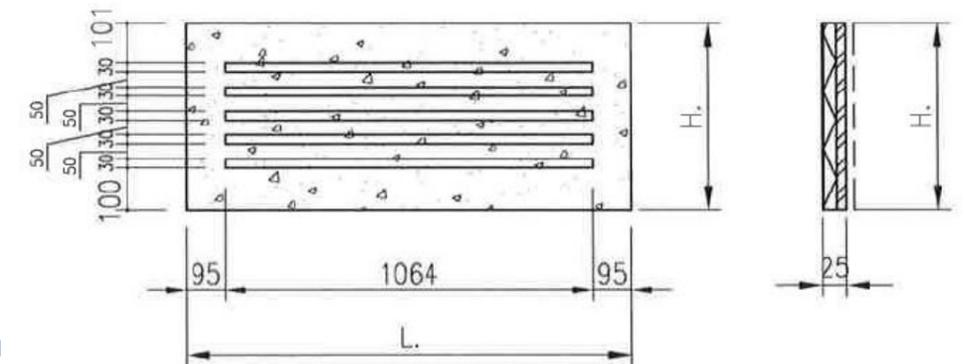
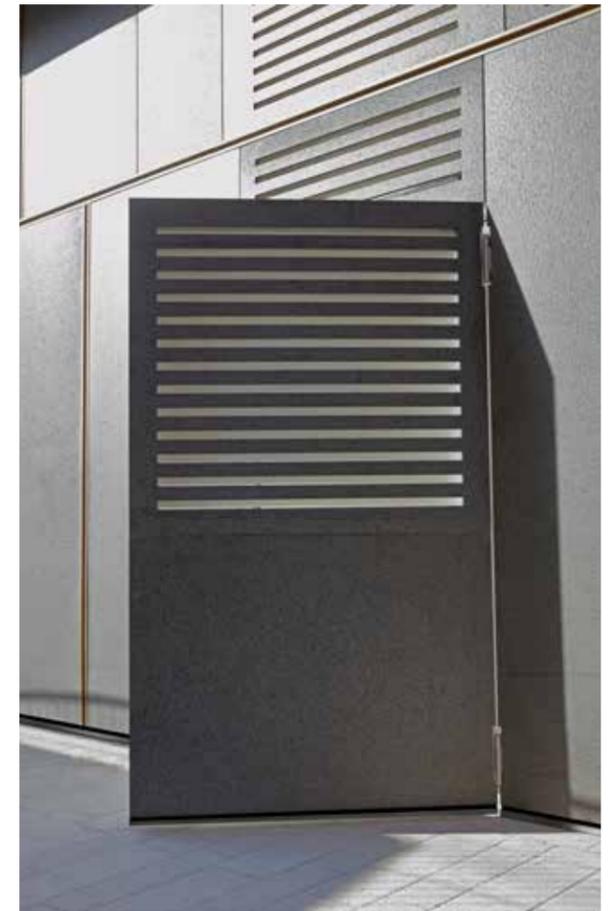
## ULTRALIGHT LARGE SIZE SLABS

GammaStone AIR slabs represent a state-of-the-art solution that guarantees high performance standards and offers an unparalleled aesthetic beauty. The GammaStone AIR system enables the designer to specify large-format panels with

confidence. The basement in black basalt stone, interrupted by profiles in burnished brass, accentuates the overhang of the overlying volume, while the wall on the street that tilts inwards is covered with bronzed micro-perforated sheet.



The neutral black and grey tones of the natural stones, Basalt and Peperino, allow a contemporary compositional building, in contrast with the surrounding context, to be in line with the landscape both from the tonal and material point of view. The fine stone finishes lead back to a desired enrichment of the building. Both stones are volcanic and their origin generates, a particular technical aspects, which guarantee its resistance over time. Besides, they have been recommended because they represent a cult in the street furniture.



Slotted panel



The modular facades of the large-format façade in peperino natural stone, typical of the Lombard tradition, are interrupted by staggered floor-to-ceiling windows. The satisfactory result definitely looks worth the wait. It has brilliantly passed all the quality standards required in the design phase. The design concept has been entirely entrusted to the architect Carlo Donati who, together with the AIR technology, succeeded in interacting the requirements dictated by the artistic direction with those dictated by the client, thanks also to the tangible dedication and professionalism of GammaStone.



**NATURAL AIR**



GammaStone NATURAL AIR  
Trani Stone

# MATERA RAILWAY STATION

Restructuring and redevelopment

ARCHITECTURAL DESIGN:  
**Stefano Boeri Architetti**



Watch the video of  
MATERA building site

GammaStone  
NATURAL AIR  
Trani Stone

Railway Station  
Matera  
40°40'N 16°36'E

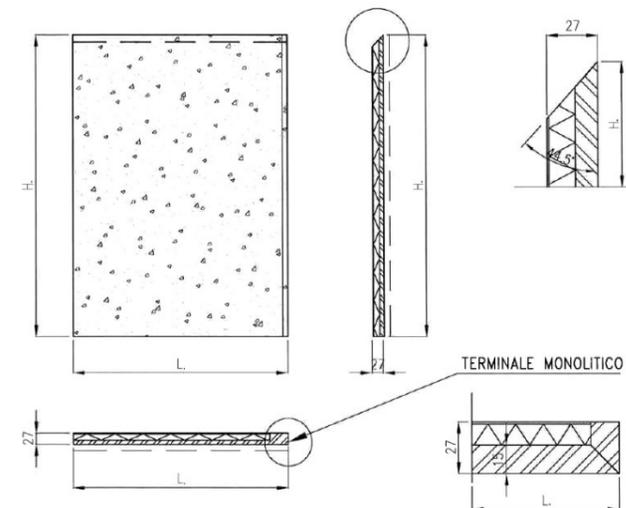


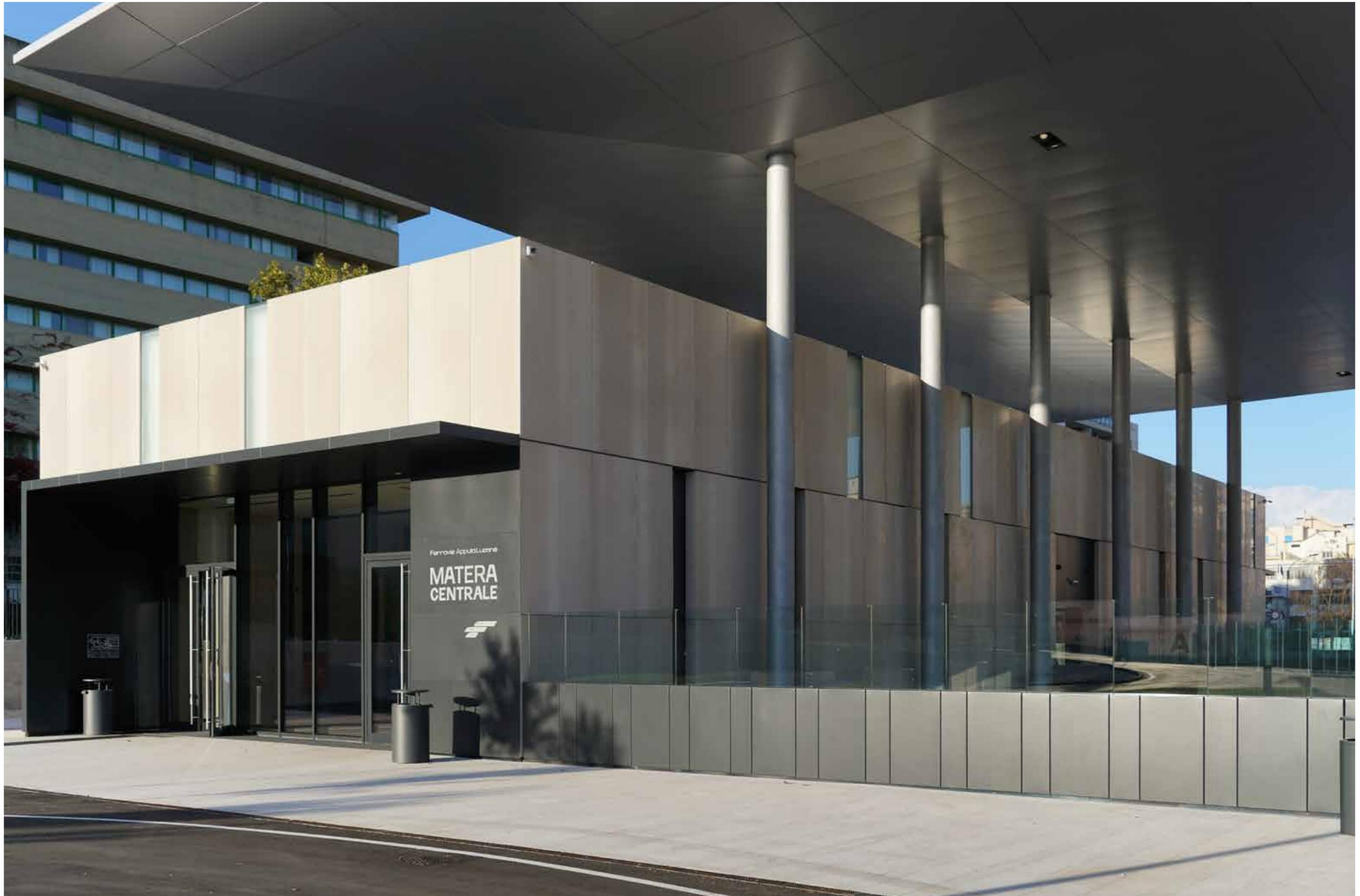


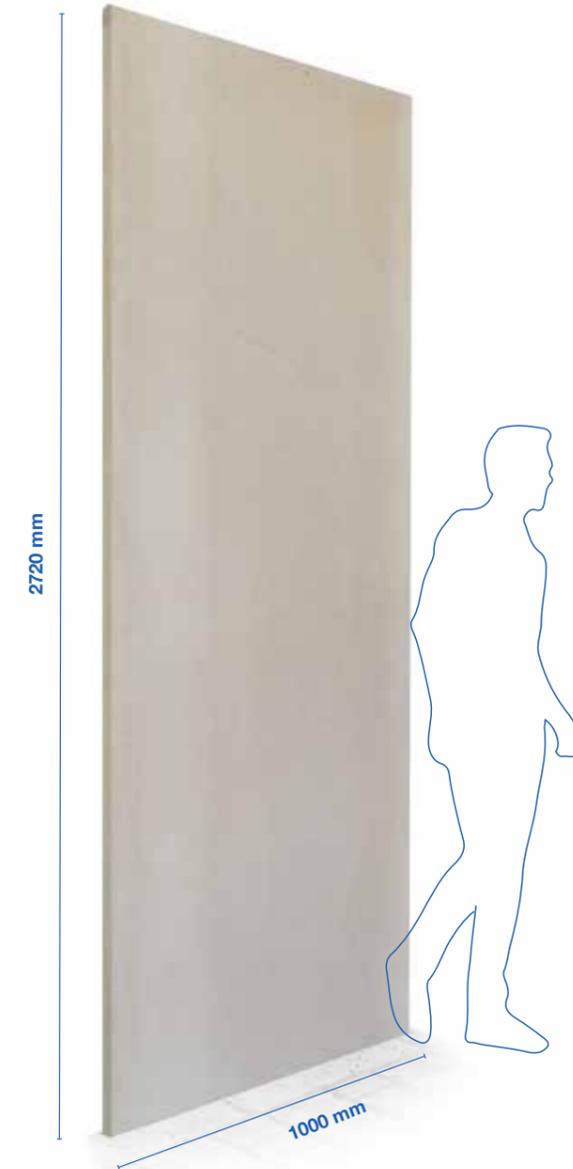
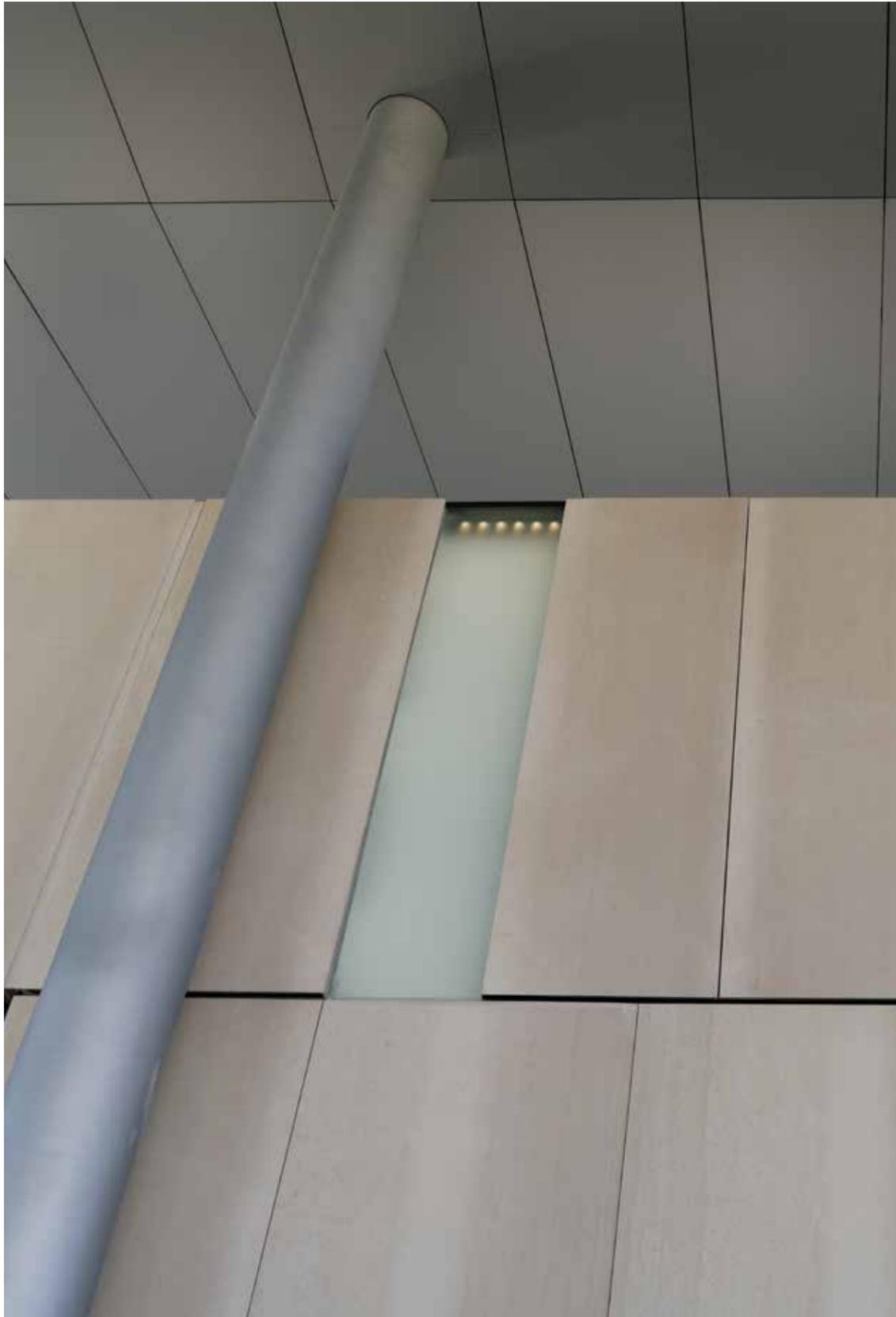
Redesigned by the Archistar Stefano Boeri, the building renovation project through aesthetic and functional redevelopment, as well as technological and railway adaptation of the existing railway station of Matera. The city of the Sassi, intends to restore greater visibility to the Matera Central Station FAL, an important urban "landmark", adapted to the primary urban and territorial function that the new service aspires to fulfill. The material used on the GammaStone Natural Air panels is Pietra di Tufo which is a local material. In the design the material is used from bottom till top of the structure which shows the a structure with local characteristics rising in the city center.



The project of Stefano Boeri Architetti for the new station of Matera Centrale which will connect the second municipality of Basilicata to the nearest airport of Bari and the rest of Italy with even faster connections.



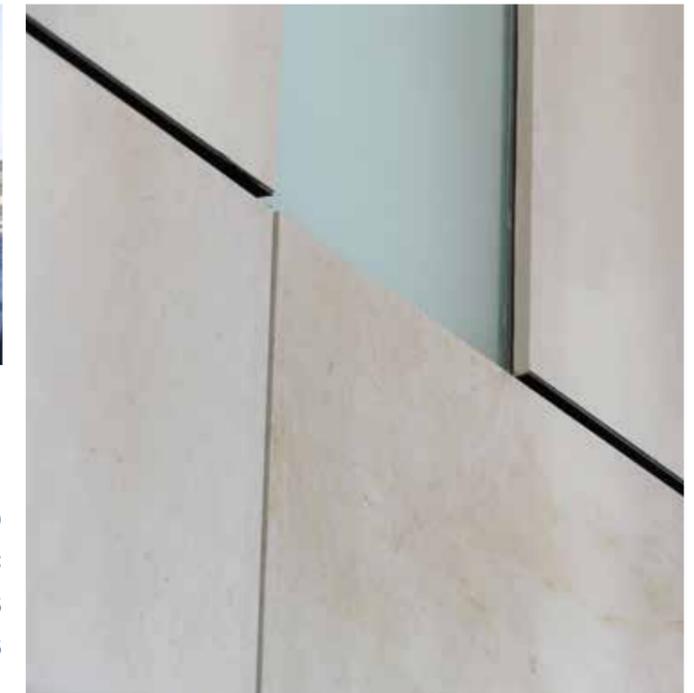
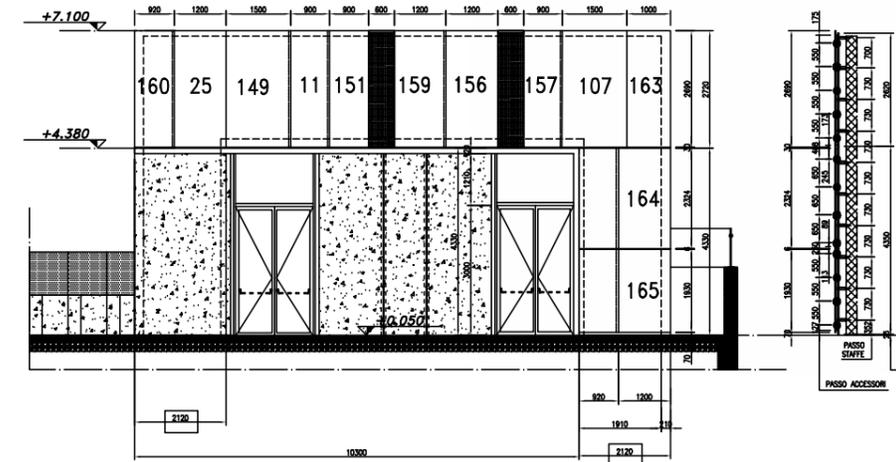
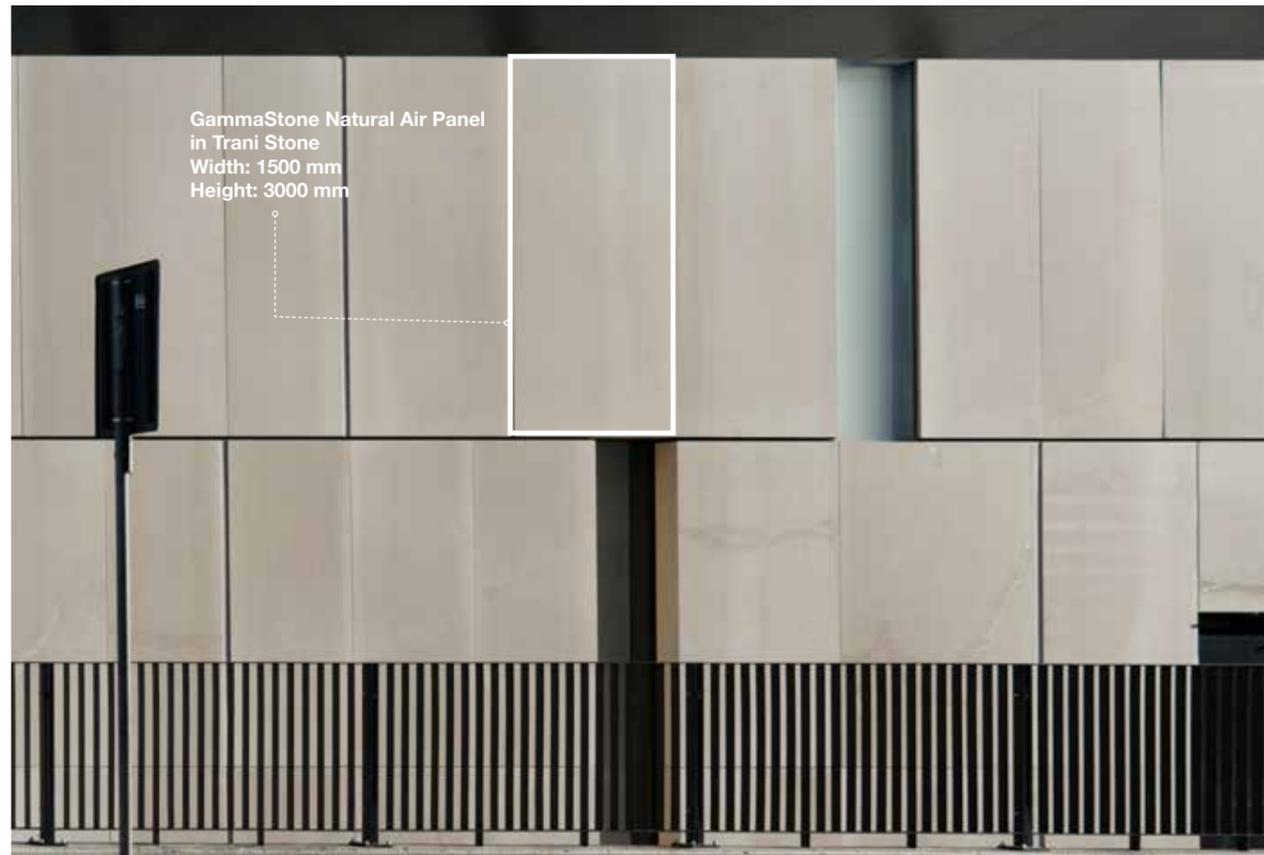
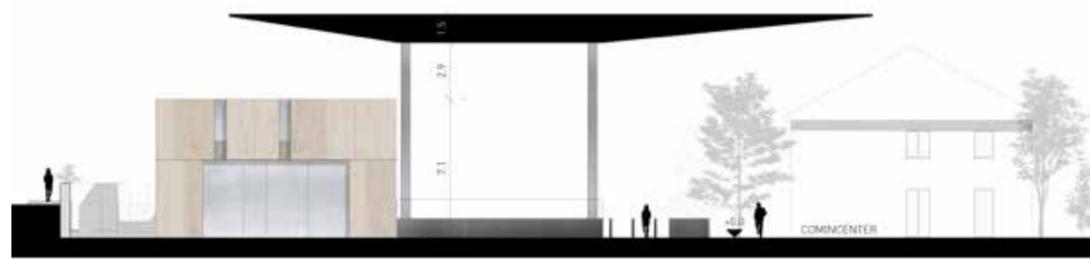
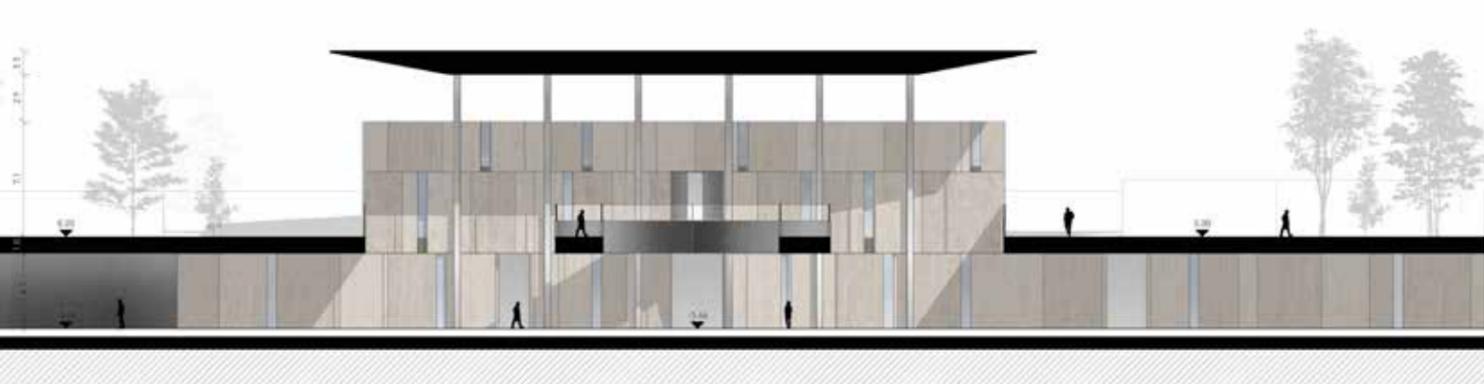




## ULTRALIGHT LARGE SIZE SLABS

GammaStone AIR slabs represent a state-of-the-art solution that guarantees high performance standards and offers an unparalleled aesthetic beauty. The GammaStone AIR system enables the designer to specify

large format panels with confidence. The delicate veins of Trani's Stone are rendered with great precision and with a three-dimensionality able to transmit an extreme visual depth.



The New Station is designed to become a recognizable public space, a place that represents the first image that a visitor has when he arrives in the city.

**GRES AIR**



GammaStone GRES AIR  
Cluny Argerot

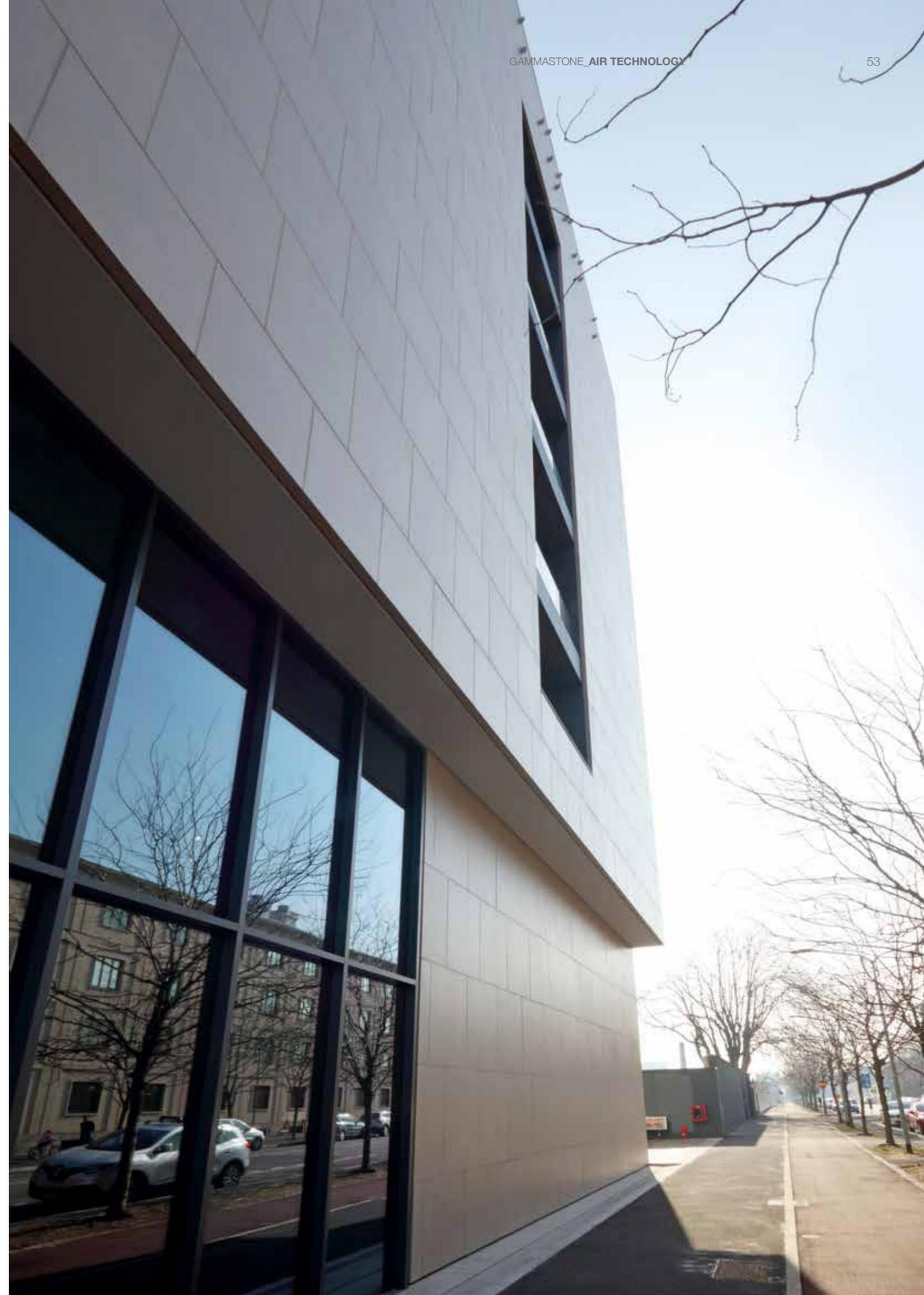
# SYMBIOSIS, MILAN

New headquarters Fastweb

ARCHITECTURAL DESIGN:  
**Antonio Citterio Design**

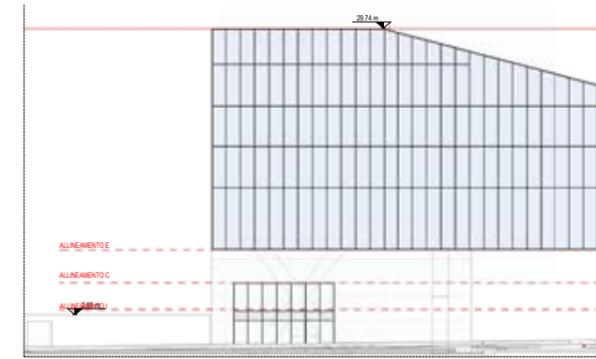
GammaStone GRES AIR  
Cluny Argerot

Symbiosis, Milan  
45°27'50.98"N - 9°11'25.21"E





GammaStone takes part in one of the main development projects located in Milan, which dealt with the redevelopment of a historic industrial area, transforming it into a new executive center, dedicated to smart working and co-working. Symbiosis is not just an engineering project, but it is a project that integrates sustainability with architecture, where offices, green areas and multifunctional spaces coexist to optimize and improve the quality of work and life in a new strategic vision of the city.



External facades - NORTH Elevation - Milan (ITALY)



External facades - EAST Elevation - Milan (ITALY)



External facades - WEST Elevation - Milan (ITALY)

CLOSED JOINT



External facades - SOUTH Elevation, Via Adamello - Milan (ITALY)



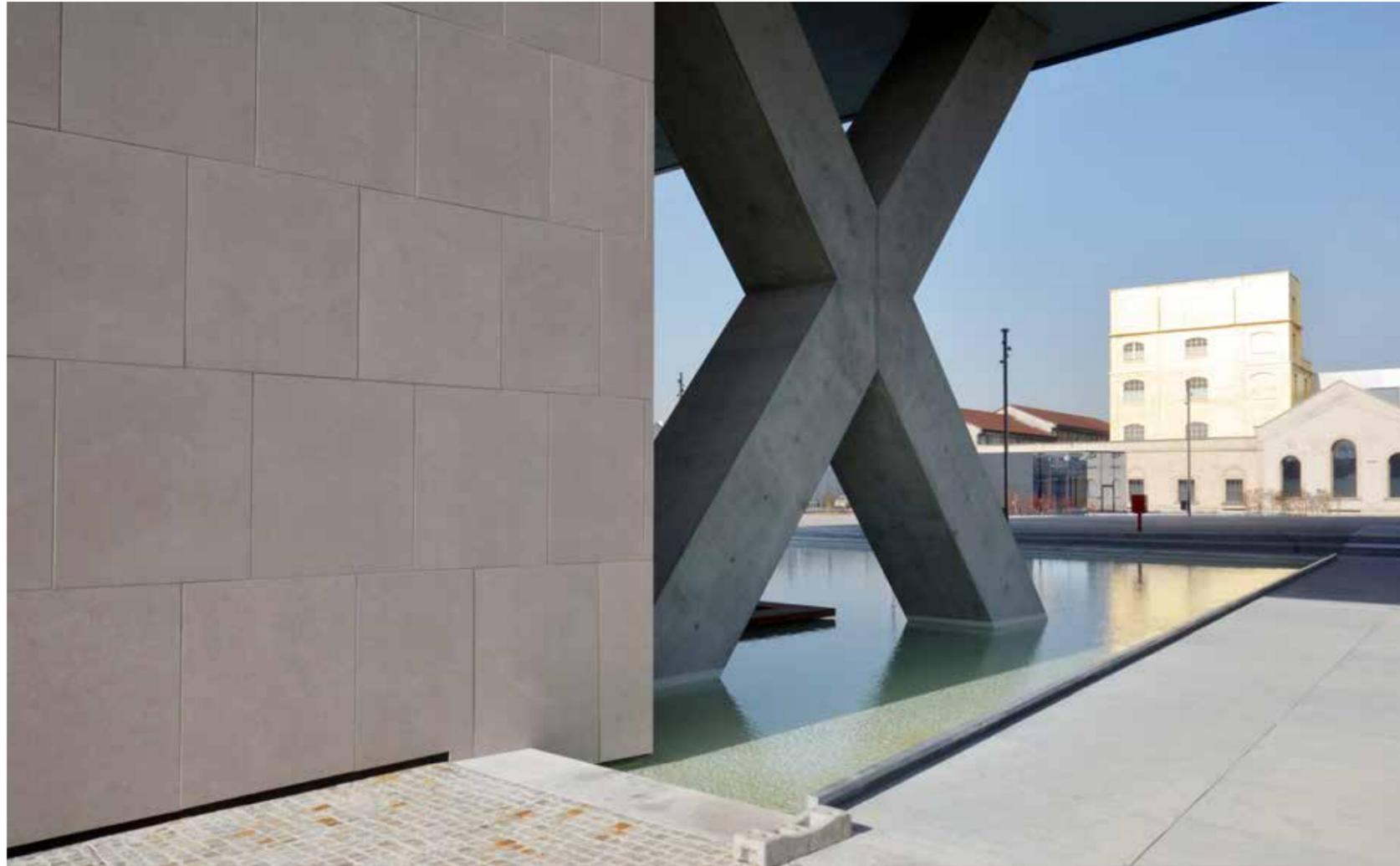


Exclusive and intelligent spaces created with attention to the finishes design and quality, which adopt high quality standards and guarantee reduced maintenance costs over time. The innovative GammaStone Gres Air solution has been used for the external cladding as ventilated façade of the new Fastweb headquarters. The light brushstrokes alternate with the large windows, showing a linear laying with a schematic and clean architectural concept.

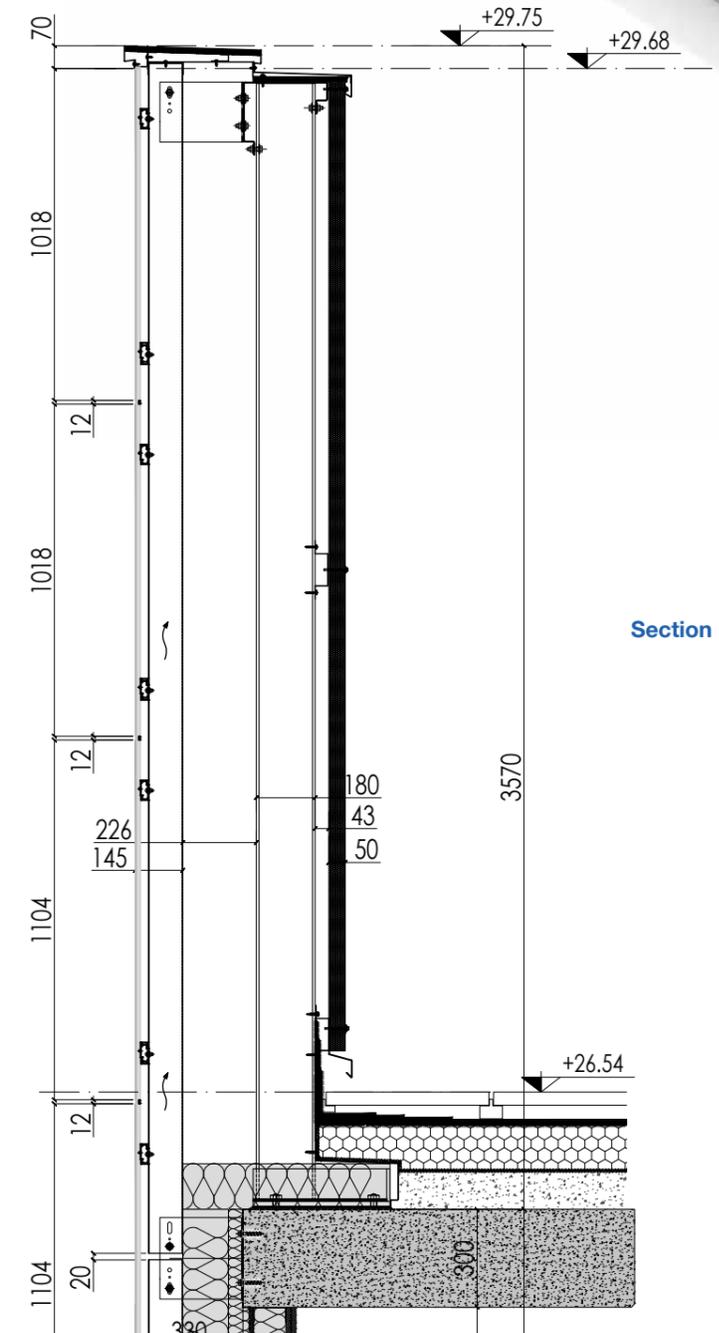
## A landmark development project in Milan

- A+B Fastweb HQ & Cirfood: 20,500sqm**
- C+E Offices: 18,800sqm**
- D Offices: 20,500sqm**
- F Offices: 21,300sqm**
- G Offices: 16,200sqm**
- H Offices: 18,500sqm**
- ICS School: 9,200sqm**





MITERED RETURNS



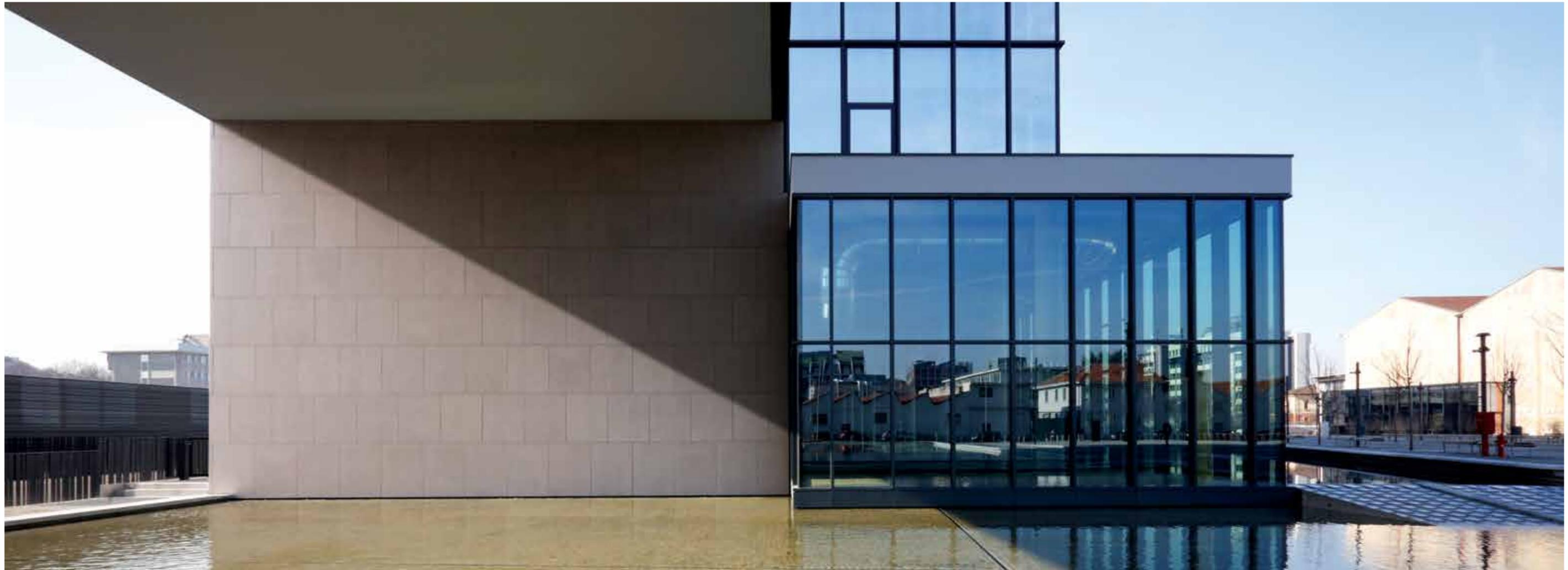


A refurbished and entirely sustainable area that redefines the city's geography. Symbiosis is a flexible and highly technological Business District south of the Porta Romana neighborhood of Milan that introduces a previously unimaginable model of the future. The iconic project, designed by Antonio Citterio and Patricia Viel, meets important sustainability, technology and flexibility criteria, and communicates these values through an ongoing dialogue between indoor and outdoor environments.

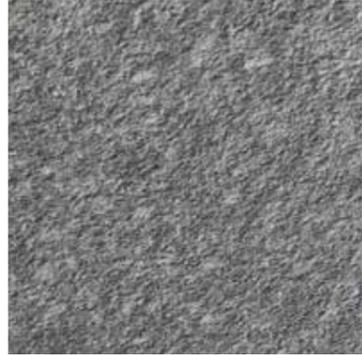


The workspaces are lit through wide full-height glass windows, contaminated settings that create the ideal habitat for cooperation and development of new ideas. The new public spaces at ground level aim to become a reference point for the district's community and a meeting place for outdoor activities, integrating work and leisure time. The large glass façades of the building establish a connection between the internal and external environment, and the choice of a neutral ceramic material for the external coating gives a touch of absolute modernity.

The white color, practical and undoubtedly refined, adapts naturally to the environment and refers to the concept of practicality responding as well to the current need of the digital reality of the company. GammaStone demonstrates to be up to expectations and is once again effectively projected into the future.



**GRES AIR**



GammaStone GRES AIR  
Valmalenco Stone Effect

# RICHARD TOWER

Facade tower renovation

ARCHITECTURAL DESIGN:  
**BMS PROGETTI**

GammaStone GRES AIR  
Valmalenco Stone Effect

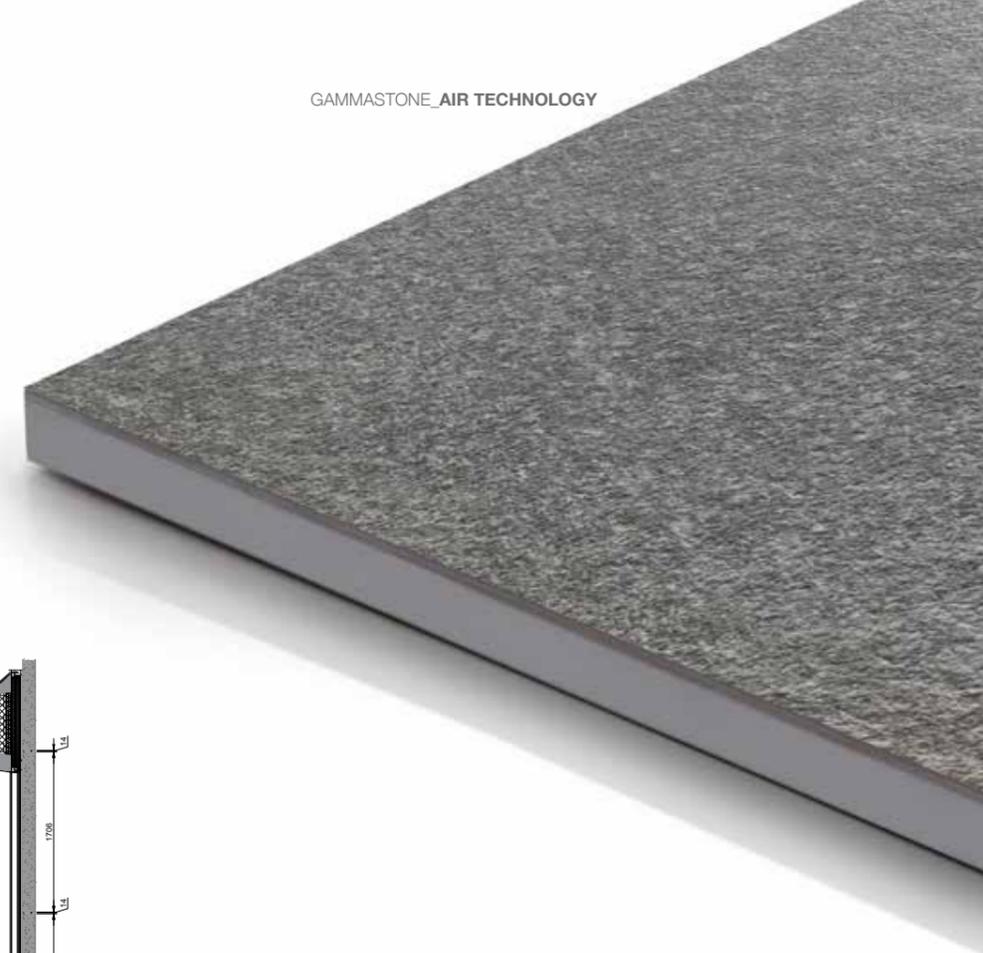
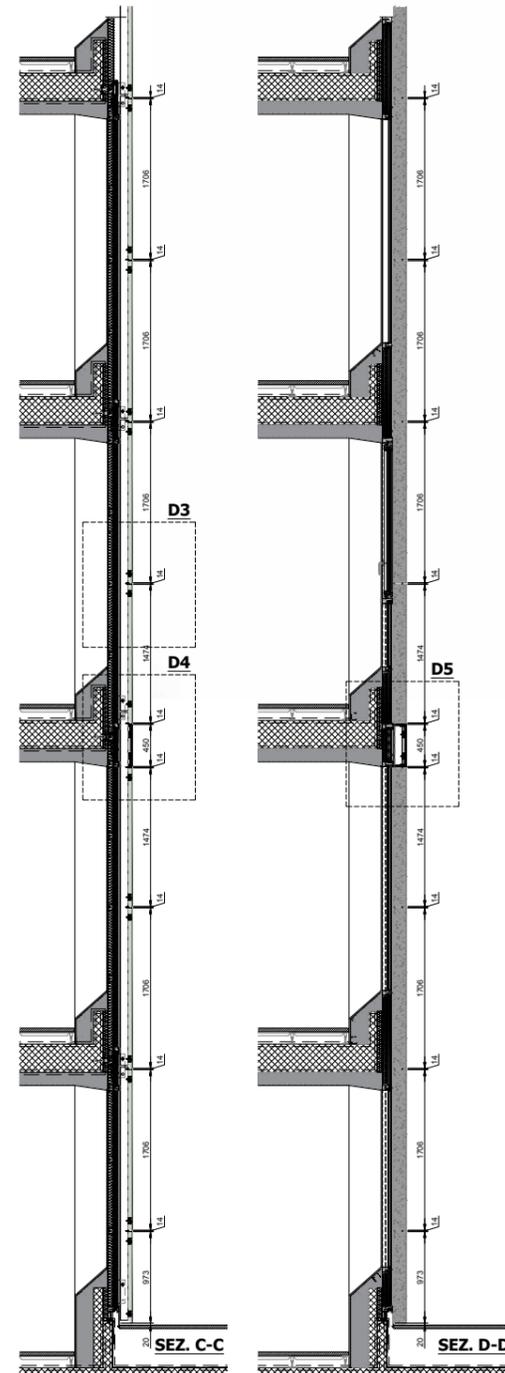
Richard Tower, Milan  
45° 28' 23.9916" N  
9° 10' 22.4292" E





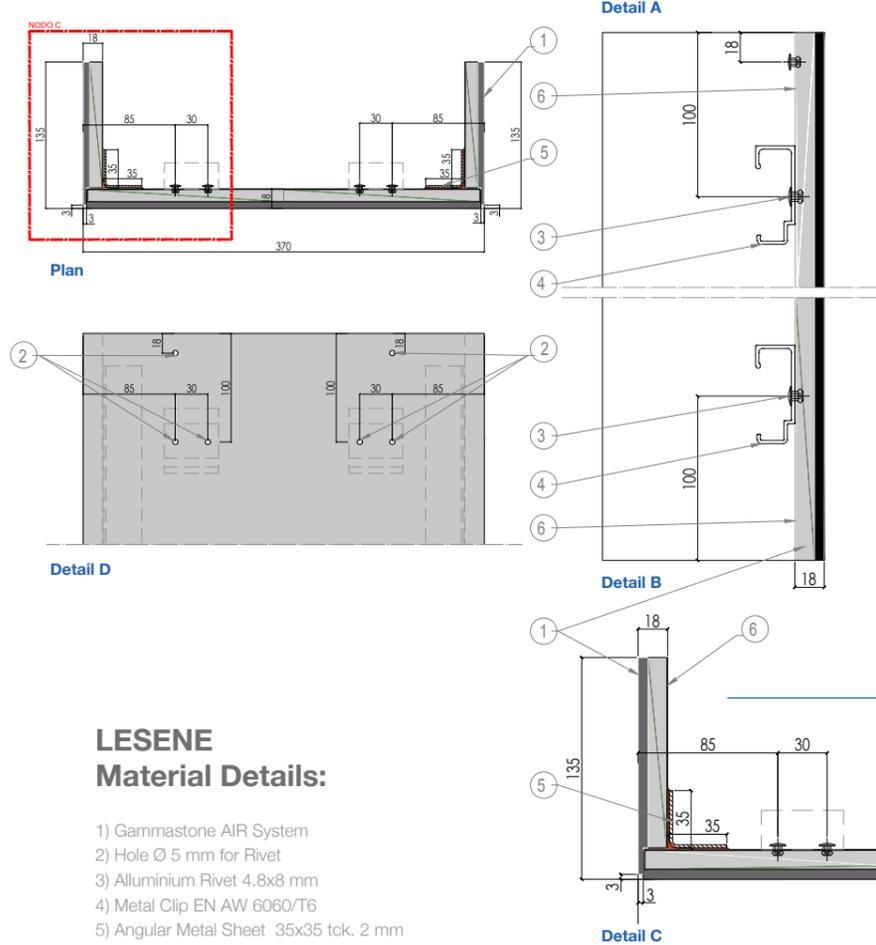
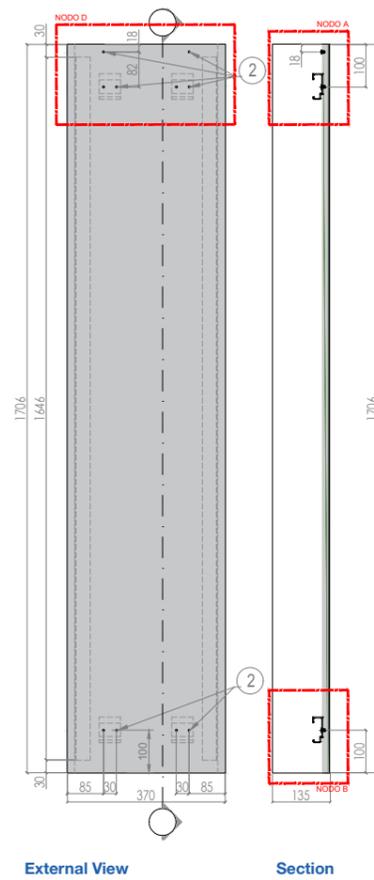
For what concerns volumes and composition, the joining element embraces the existing basement of the building, regularizing its geometry and creating a new compact front between tower and base.

**GAMMASTONE GRES AIR  
SLABS CUT**



The Richard Towers redevelopment project in Milan represents an excellent and innovative architectural design by BMS Progetti. The complex consists of 7 towers, where GammaStone provides the façade, pilasters and string courses of the 18-storey Tower C with its Gres AIR “Valmalenco Stone effect” lightweight panels and pre-assembled elements. The exclusively designed and customized corner solutions of the pre-assembled elements make this project unique and elite.

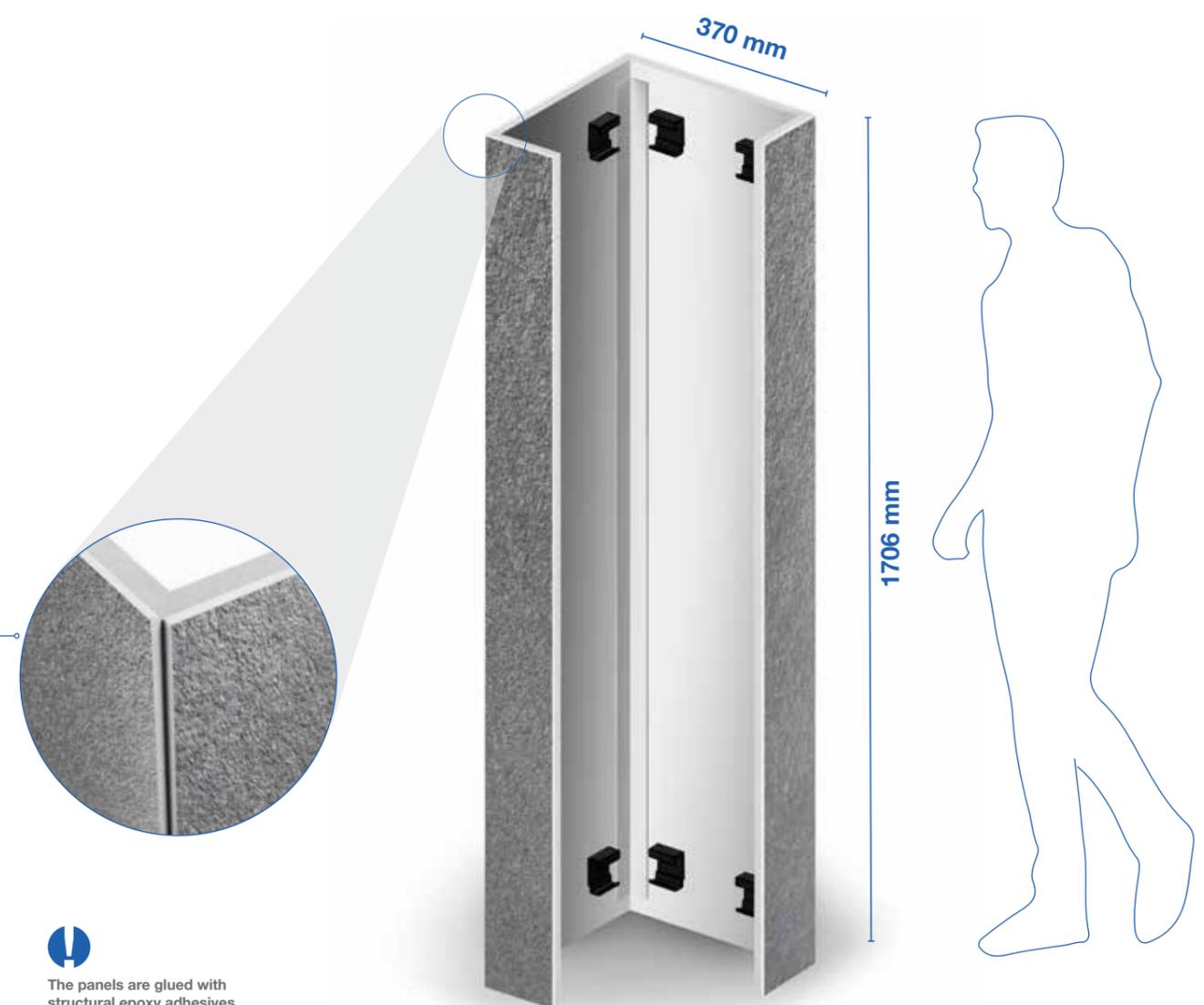
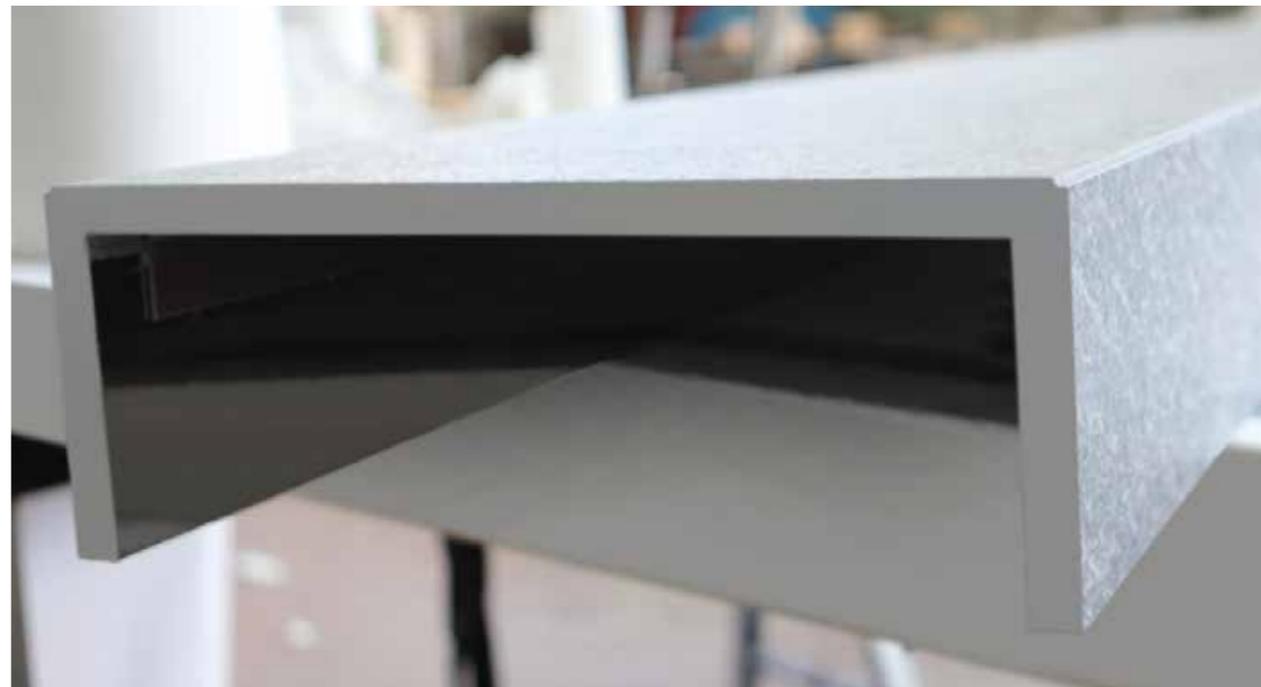




**LESENE  
Material Details:**

- 1) Gammastone AIR System
- 2) Hole Ø 5 mm for Rivet
- 3) Aluminium Rivet 4.8x8 mm
- 4) Metal Clip EN AW 6060/T6
- 5) Angular Metal Sheet 35x35 tck. 2 mm
- 6) Stainless Steel 5/10 mm

Quirk Assembled Element

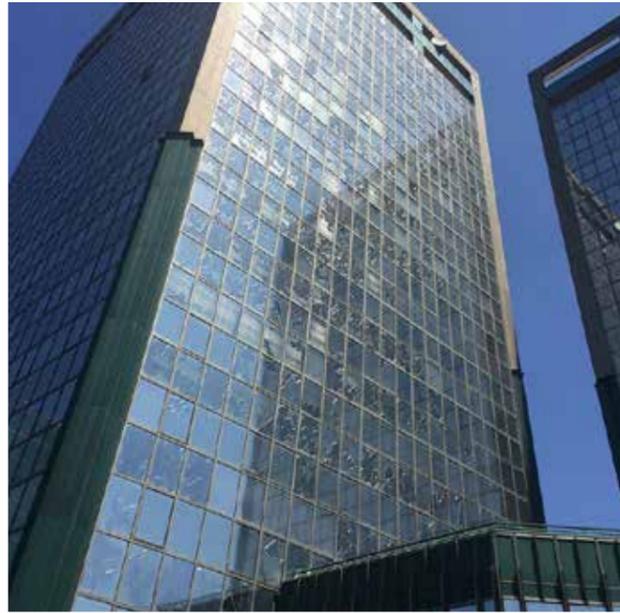


**!**  
The panels are glued with structural epoxy adhesives and reinforced by metal angle forming a single monolithic architectural element.

**QUIRK ASSEMBLED  
ELEMENTS**

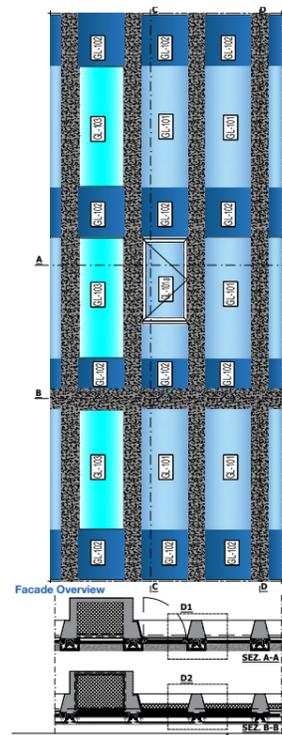
The façade system features a vertical wall pattern that deals with the structural corner elements and flows to the top of the tower as a true crowning that allows integration with the brand signs of the company that will use the building. The new façade consists of two elements, the full pilaster and the window, alternating with a regular rhythm to generate a constant horizontal modularity on the whole tower. This creates a wall surface, stone-like in

material, which pursues a simple design, made up of few but meticulous details, in harmony with the neighbouring towers but simultaneously showing desire for change and modernization. The partial demolition of the existing sills with the extension of the transparent part of the glazed façade leads to a high level of energy efficiency and comfort in the internal space.



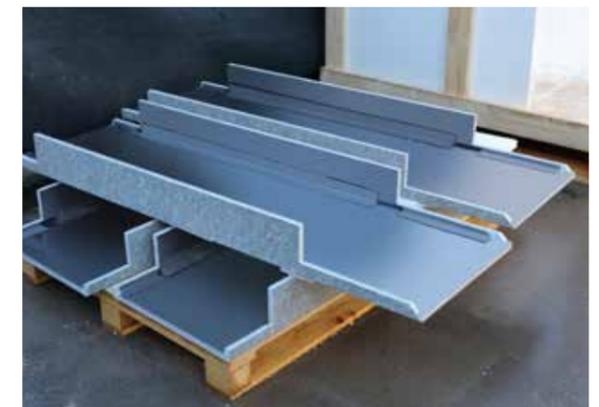
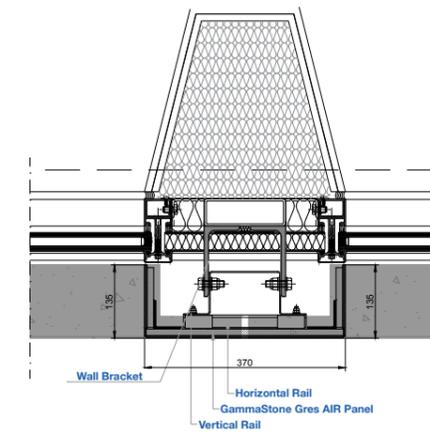
OLD BUILDING

Rethinking two of the tallest towers, hoping that they could dictate the guidelines for future interventions on the adjacent buildings, the retrofit project starts from the ground level, redefining its relationship with the street, with a double-height covered porch that creates a filtered space between the road and the real entrance to the building. These similar buildings located in points of access to the city, currently in a state of almost total abandonment, are the manifesto of an intense expansion, often disconnected from the surrounding urban fabric. Therefore this is an important opportunity to rethink these building complexes, giving them a stronger identity through the use of a renewed language, akin to the architectural and urban culture of the city.



Thanks to the overall energy efficiency design and the resulting volumetric bonus, it is possible to create a new floor on the top of the building, with its terraces and panoramic loggias contained within the silhouette of the tower.

Detail D1



GRES AIR



GammaStone GRES AIR  
Base Bergen



archiproducts  
DESIGN AWARDS  
WINNER 2018

REALE MUTUA  
ASSICURAZIONI  
Luxury office

ARCHITECTURAL DESIGN:  
Iotti + Pavarani Architetti

GammaStone GRES AIR  
Base Bergen

Reale Mutua Assicurazioni, Turin  
45°04'N 7°42'E





Elegance and simplicity are the results of meticulous and creative work. The facade of Reale Mutua Assicurazioni building, realized with GAMMASTONE Gres AIR panels Kerlite Bergen Base shows the great craftsmanship of the workforce and the incredible result in terms of lightness achieved by GammaStone AIR technology.

The design of the new offices facades tries to establish a dialogue with the context of the surrounding buildings (dated XVIII – XIX century), looking for an integration of material, colors, proportions, alignments and yet to generate a gravity point in the urban environment, through a façade organization that is rigorous and sensitive, and relies on essential shapes – with a longer permanence in time and therefore capable of escape the mutability of fashion.

The building aims to be contemporary and at the same time intimately connected to the place... as if it had always been there, to communicate the solidity and permanence in time, values that represents Reale Mutua and Turin.



**External facades** - West elevation on Reale Mutua,  
Corso Siccardi - Turin (ITALY)



© Iotti + Pavarani Architetti and Artecna. Reale Group Office, Turin

Geometric architectural elements, large-format and surprisingly lightweight panels that are entirely assembled in our factory and can be installed with rapidly using the most common hanging systems.

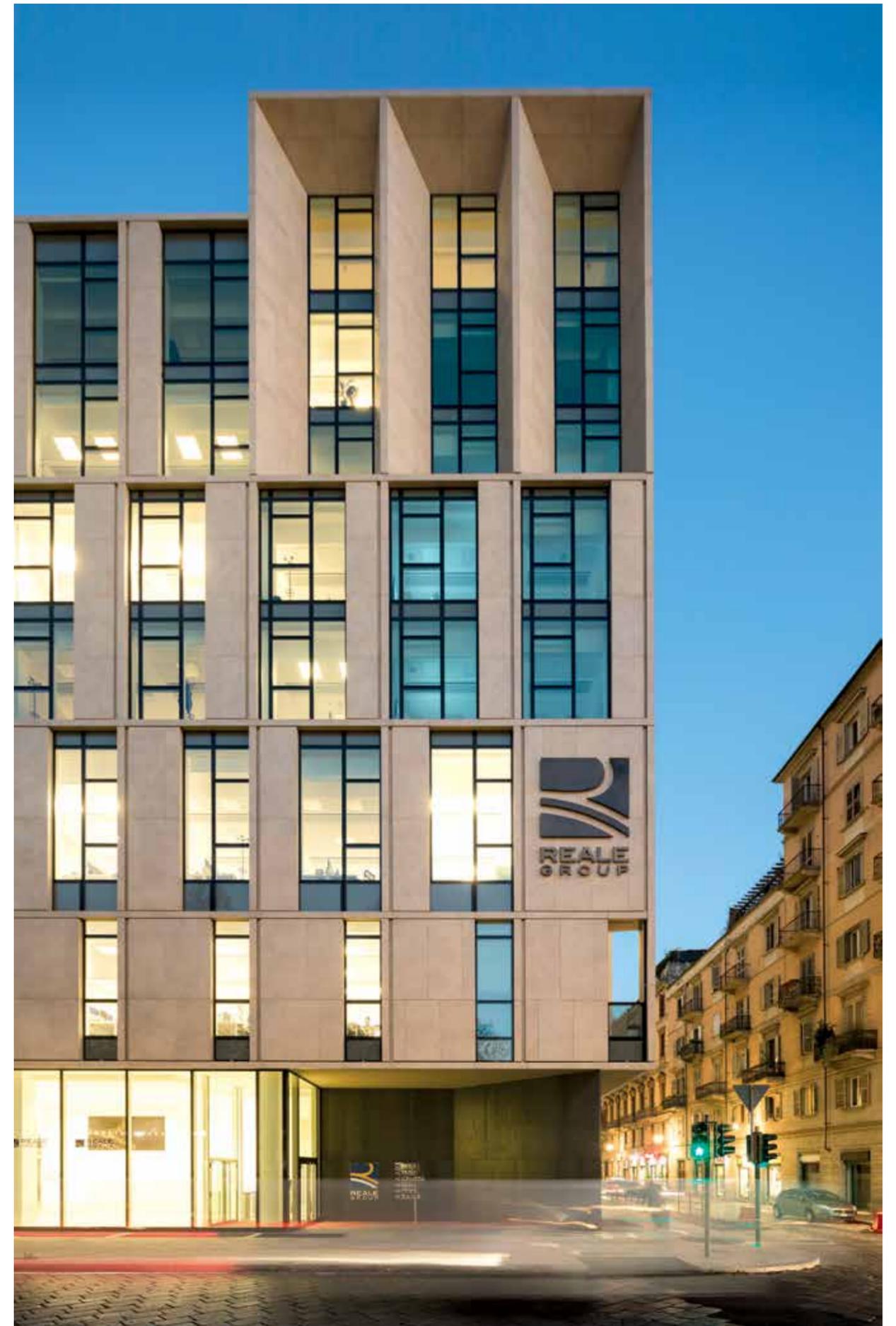


The panels are glued with structural epoxy adhesives and reinforced by metal angle forming a single monolithic architectural element.

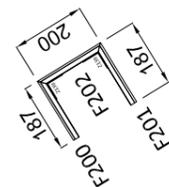
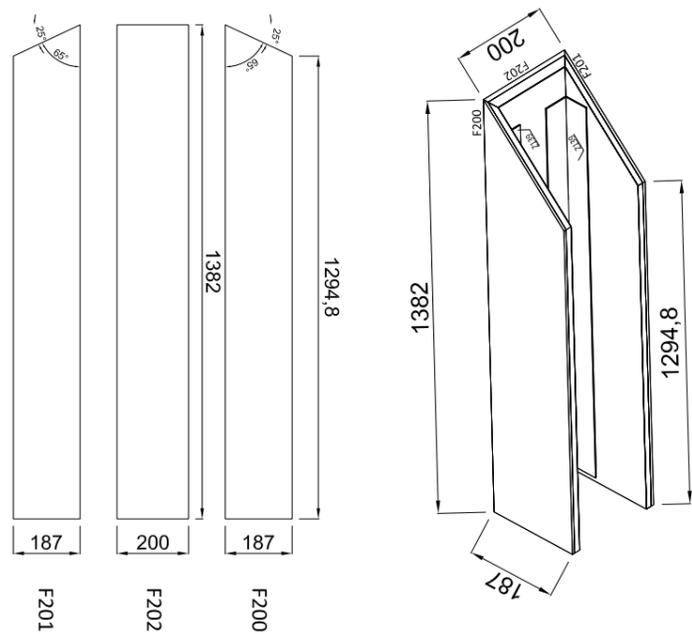
## MONOLITHIC ARCHITECTURAL ELEMENTS

The GammaStone AIR system enables the designer to specify large-format panels with confidence. The panels are anchored mechanically either with concealed or visible fixings allowing simple attachment to the substrate. The resistance to wind

load is greatly superior to any Technical requirement imposed by the current regulations even in climatic zones subjected to weathering extremes such as monsoons and hurricanes. GammaStone AIR is a product protected by patent.

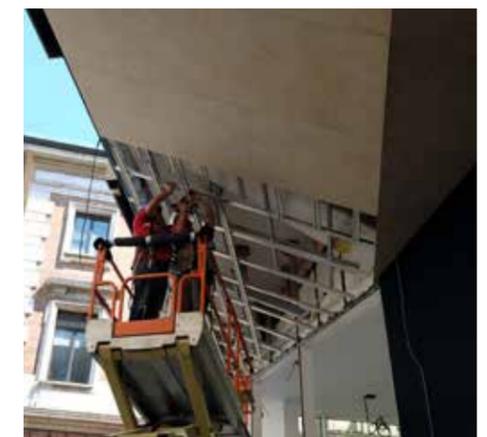






GammaStone AIR slabs represent a state-of-the-art solution that guarantees high performance standards and offers an unparalleled aesthetic beauty.

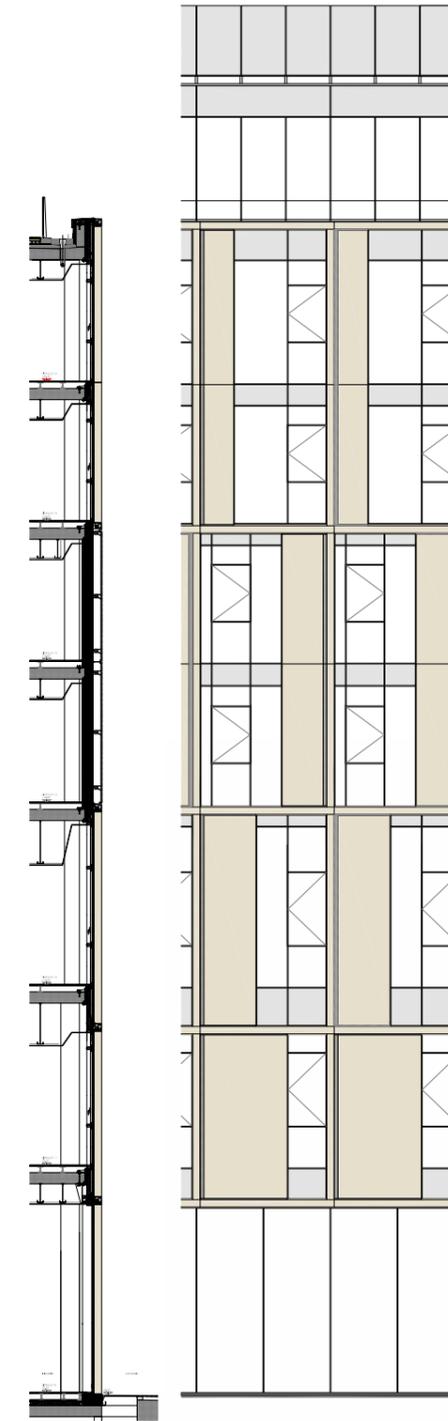
GammaStone Gres Air Panel in Base Bergen  
Width: 1000 mm  
Height: 3000 mm





This project consists in an external cladding characterized by large window areas with ornamental architectural elements. The alternation between the glass and porcelain gres and the variable proportion of the windows size give dynamism and modernity to the façade. These features harmoniously match with the traditional color of the ceramic, ensuring a functional and prestigious result.

**5 MM THICK CERAMIC  
SLABS 3000x1000 MM**



**Internal facades 4**  
Detailed section



GRES AIR



GammaStone GRES AIR  
Black Veined

NEW D&G STORE,  
THE DUBAI MALL  
Luxury building

GammaStone GRES AIR  
Black Veined

The Dubai Mall  
5°16'11"N 55°18'34"E





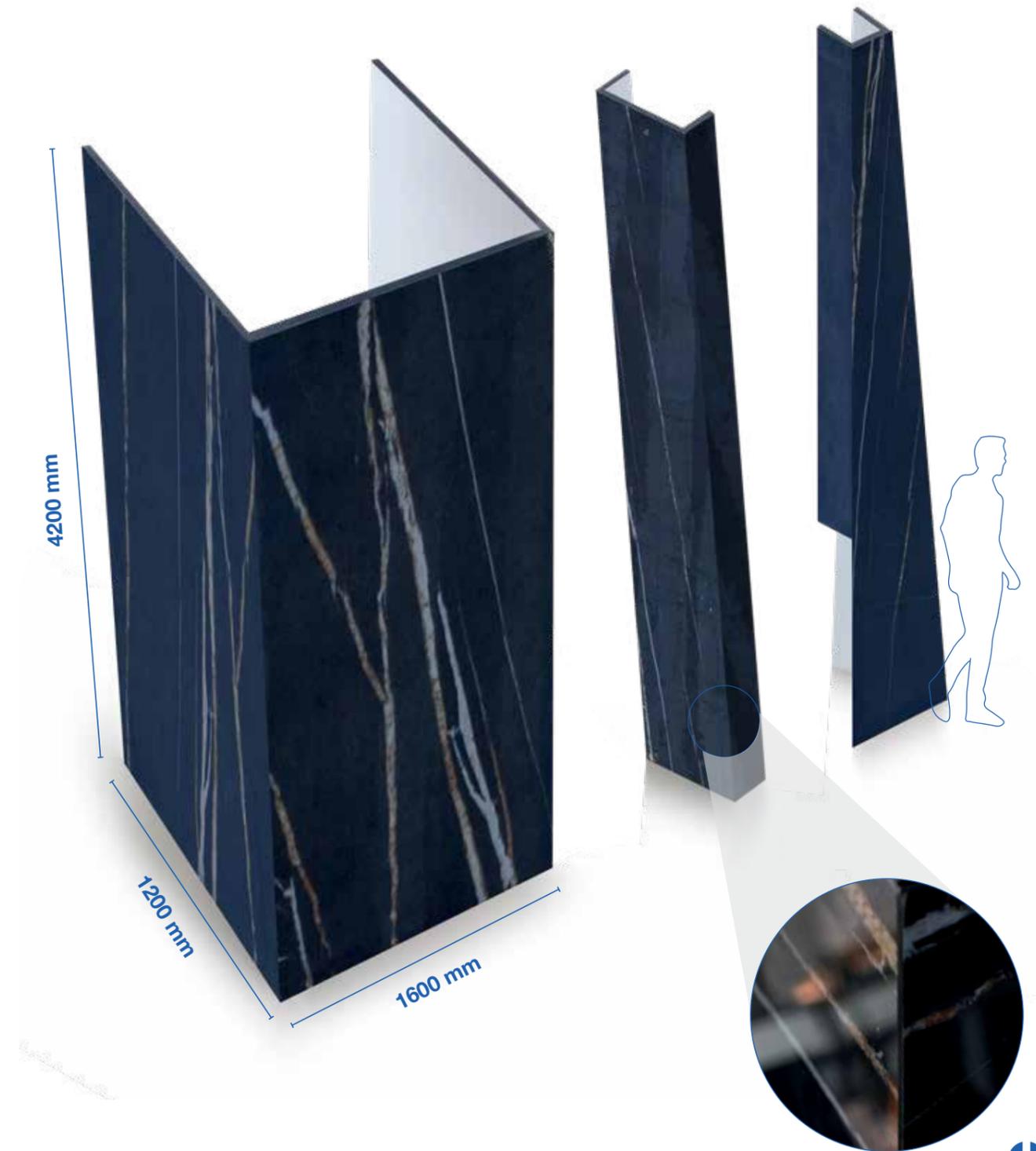
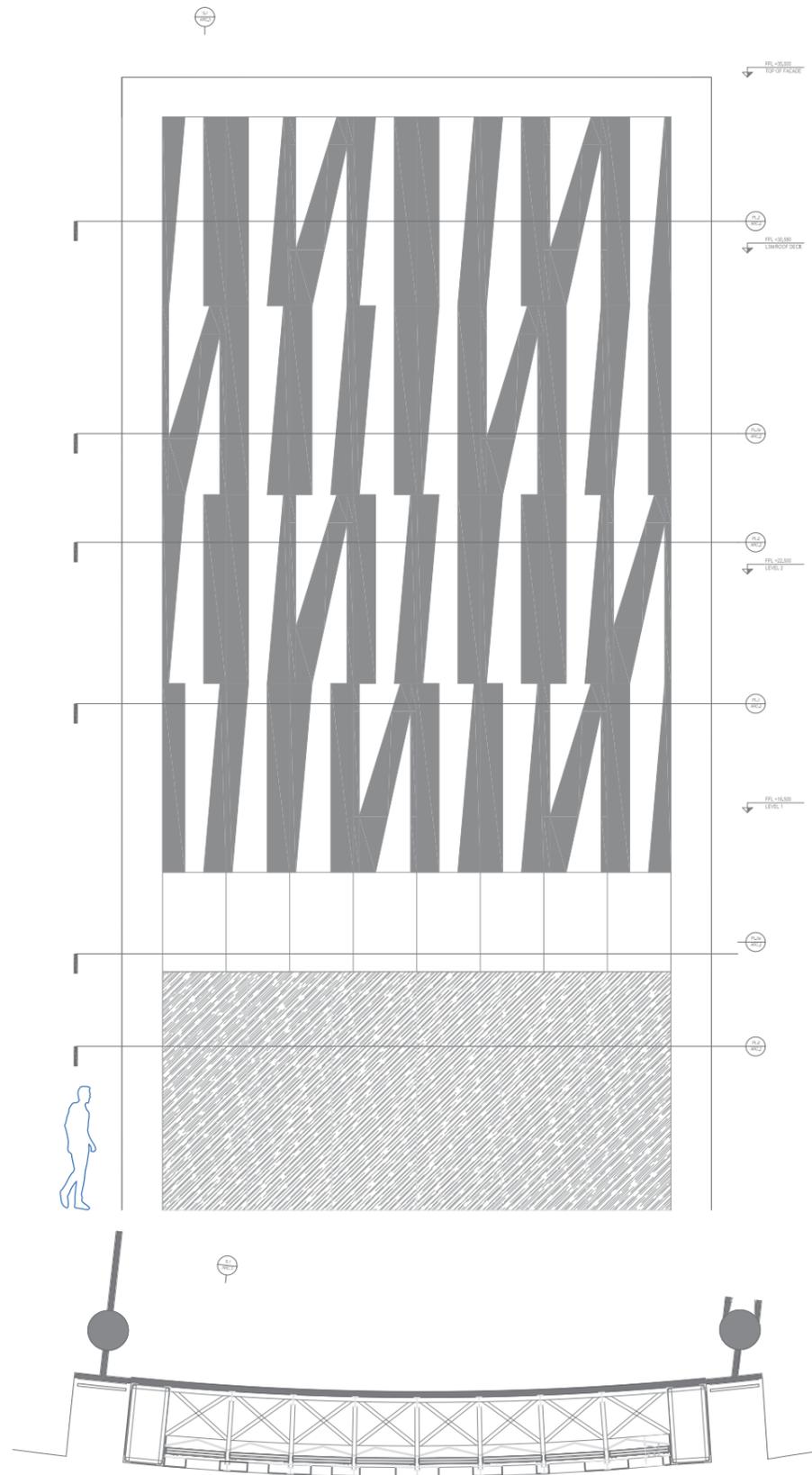
The new D&G store at The Dubai Mall is a sophisticated and complex design project, which has allowed GammaStone to show its best once again in terms of lightness and versatility. A perfect union between innovation and aesthetic value, supported by a glossy veined finish of extreme brilliance. GammaStone created monolithic panels of large dimensions, over 4200x1600mm, assembling a large number of different pieces in macro elements and maintaining the continuity of the veined finish with an imperceptible joint.

The result is a visual effect of absolute importance, which gives a tridimensional effect and dynamism to the entire façade on all its sides. GammaStone experiences a continuous industrial innovation, based on technical skills and specific technologies developed in the last years.



The **Monolithic Elements** assembled entirely in our laboratories and sent for be installed in all the world





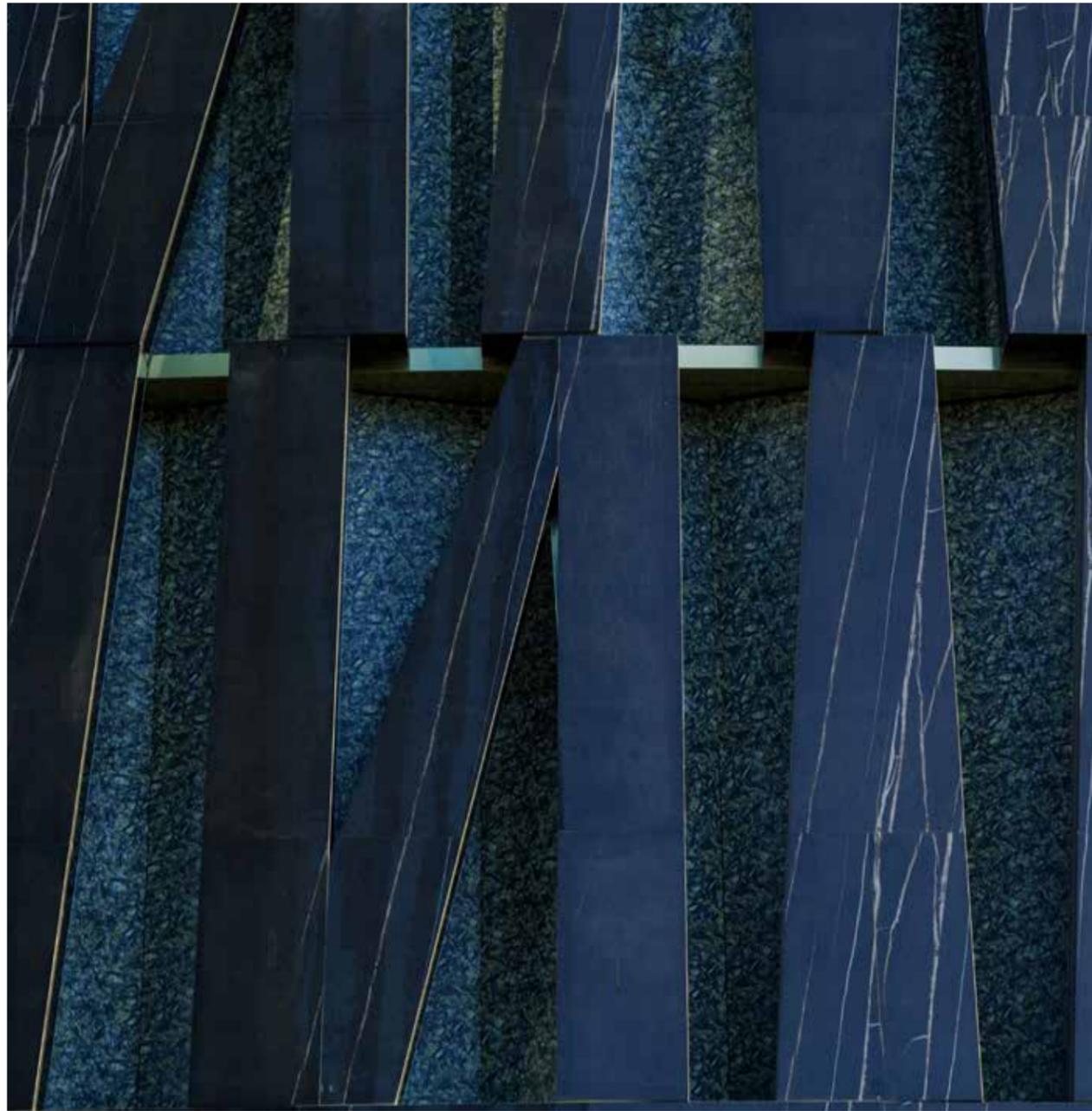
# MONOLITHIC ARCHITECTURAL ELEMENTS

**!**  
The panels are glued with structural epoxy adhesives and reinforced by metal angle forming a single monolithic architectural element.

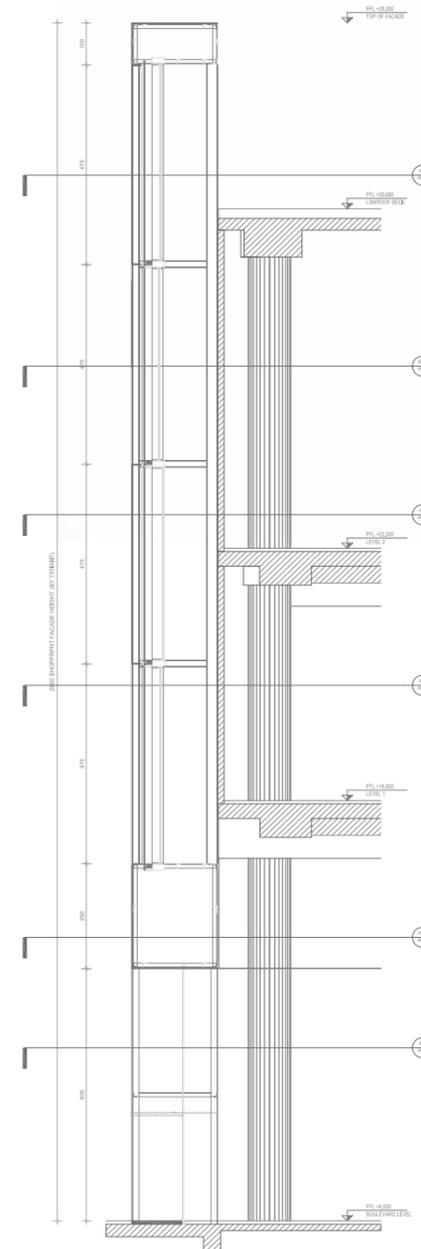
The GammaStone AIR system enables the designer to specify large-format panels with confidence. The panels are anchored mechanically either with concealed or visible fixings allowing simple attachment to the substrate. The guarantee of resistance

to wind load is greatly superior to any Technical requirement imposed by the current regulations even in climatic zones subjected to weathering extremes such as monsoons and hurricanes. GammaStone AIR is a product protected by patent.





DETAIL OF THE POLISHING



Our production is also characterized by quality artisan finishing made possible by an experienced and professional team. An innovative solution, in which GammaStone demonstrated talent and passion. The strategy of GammaStone is to pre-assemble all the elements in our factory, leaving the workers only the task of installing them on the substructure in the building site, has significantly reduced the installation time and guaranteed at the an impeccable final result, of considerable prestige.



**NATURAL AIR**



GammaStone NATURAL AIR  
Carrara White Marble

# LIBESKIND TOWER

CityLife district as “Portal to Europe”

ARCHITECTURAL DESIGN:  
**Libeskind**

GammaStone NATURAL AIR  
Carrara White Marble

CityLife District, Milan - Italy  
40°39'40"N 73°56'38"W





## LOBBY AND SEVERAL INTERIOR AREAS WITH GAMMASTONE NATURAL AIR

### General information

- GEA: 57,040 m<sup>2</sup>
- Total GLA: 35,882 m<sup>2</sup>
- 28 office floors, a triple height lobby, 3 basement floors
- Typical floor plate: from 1,200 m<sup>2</sup> (low-rise) to 1,000 m<sup>2</sup> (high-rise)
- 226 parking lots in the underground floor
- Maximum possible crowding during daytime: 2,716 people



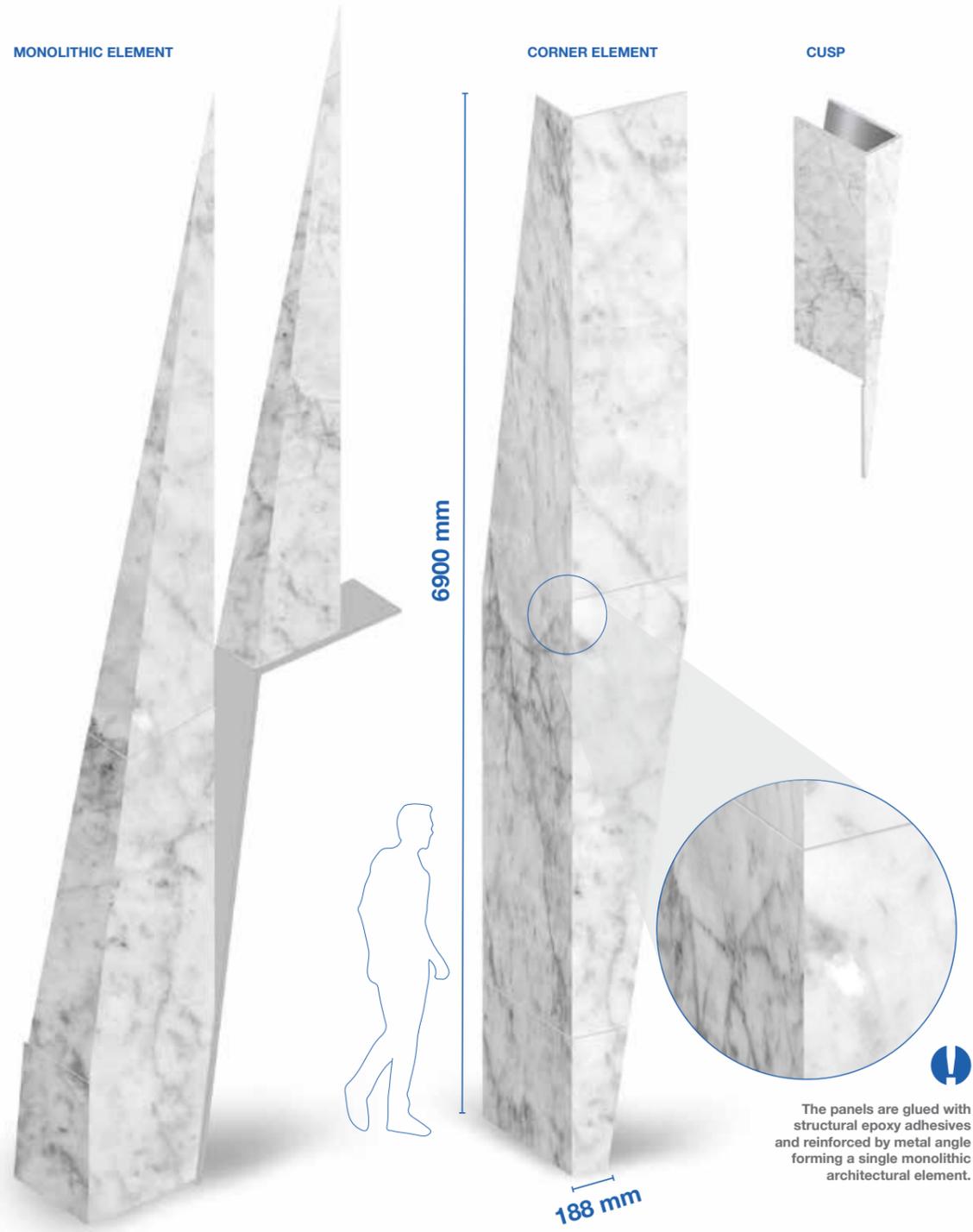
Thanks to the overall surface of 360,000 m<sup>2</sup>, CityLife represents one of the biggest urban renewal schemes in Europe, with its balanced mix of public and private services.

The well-known CityLife in Milan is one of the largest residential-commercial districts in Europe and GammaStone is proud to be a part of it. The GammaStone solutions can be found in the lobby and several interior areas of the prestigious Libeskind Tower. GammaStone Natural Air panels made with the symbolic Carrara white marble form the emblematic pyramidal columns; panels which fully meet Daniel Libeskind's design concepts for the tower.

The project consists of several polygonal shapes with irregular thicknesses and angles, but once again GammaStone shows its skills and flexibility in challenging projects by providing smart solutions. The 3D volumes are placed between the panels with a wooden finish, which enhance the charm of natural stone.

ENTRANCE LOBBY

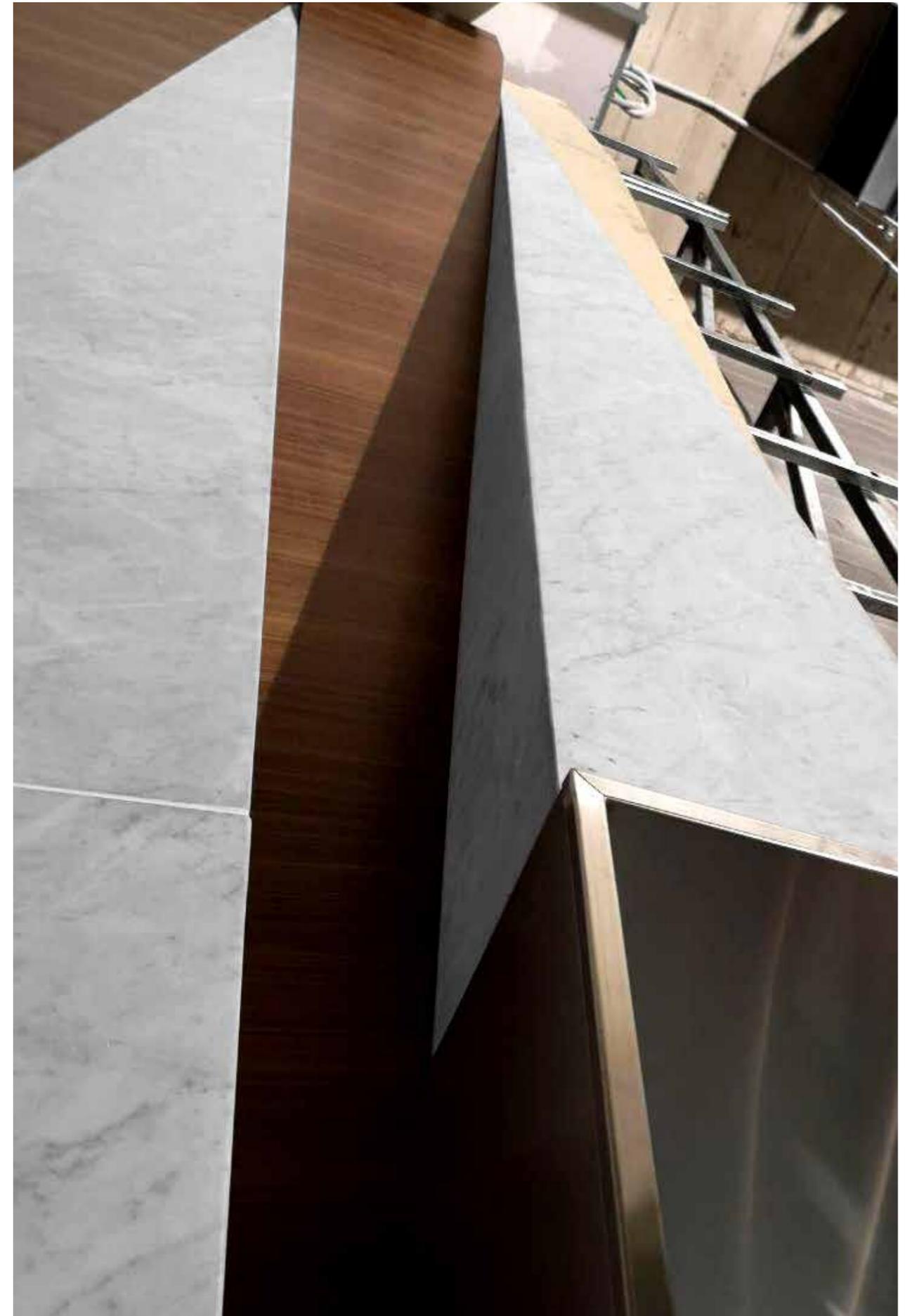




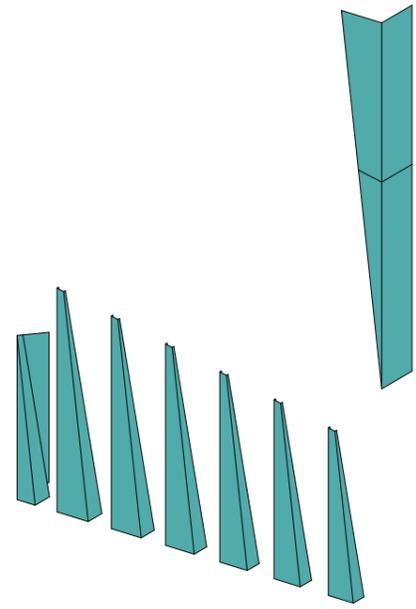
# MONOLITHIC ARCHITECTURAL ELEMENTS

Gammastone responds to the request of the architect Libeskind. At the entrance of the Libeskind Tower in Milan, there are more than 500 three-dimensional monolithic elements with complex and variable geometry- Every single element is wisely designed to follow the style of the building. For this project our material experts visited the Carrara quarry and carefully

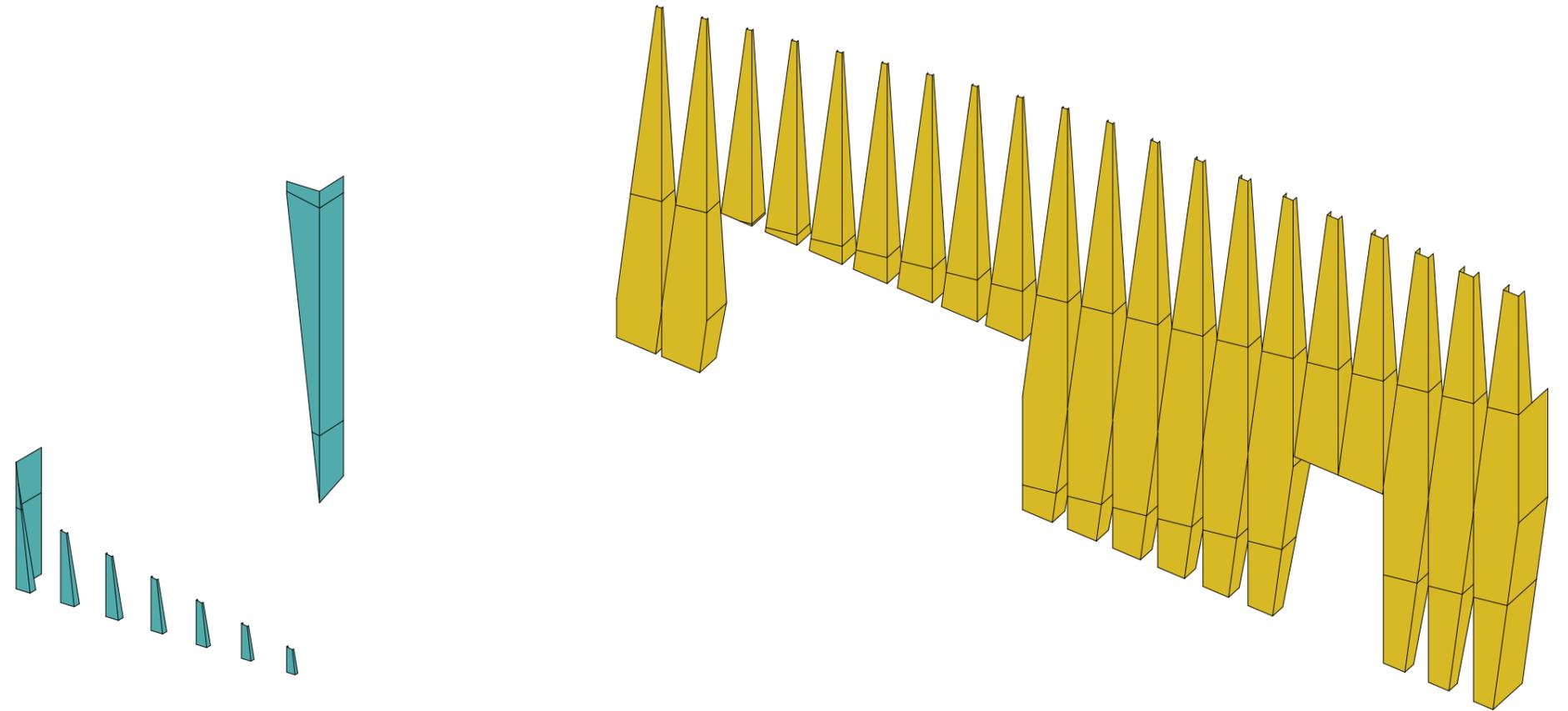
selected the slabs which met our standards in order to be processed in our laboratories. The material's characteristics creates a homogenous atmosphere between the columns and the geometric shapes. Moreover, a magnificent aesthetic effect has been applied to the design using wooden columns among the marble and opaque elements.



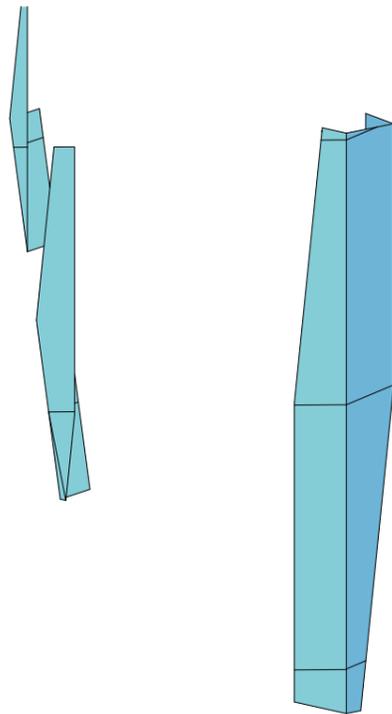
NORTH PROSPECTUS



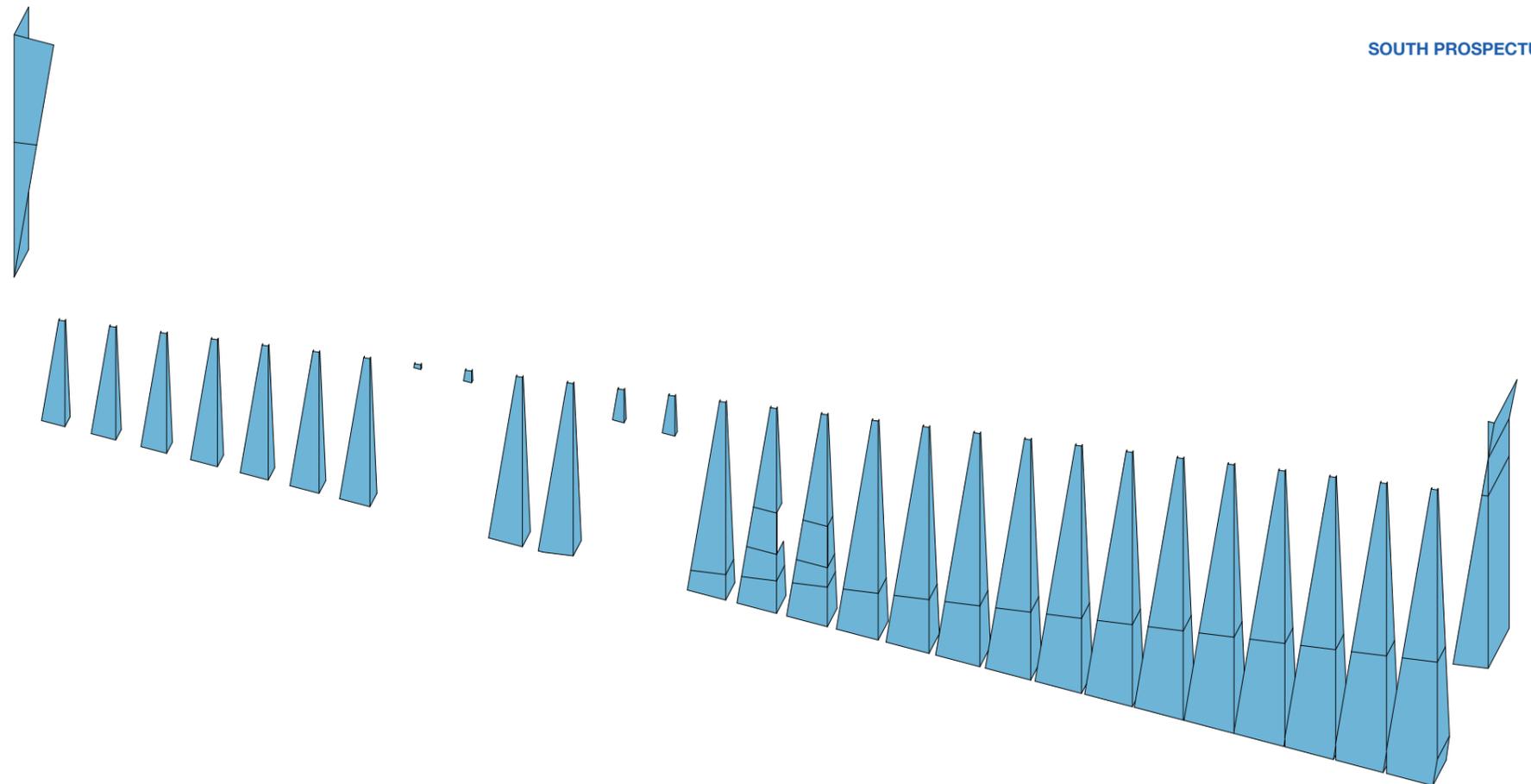
EAST PROSPECTUS

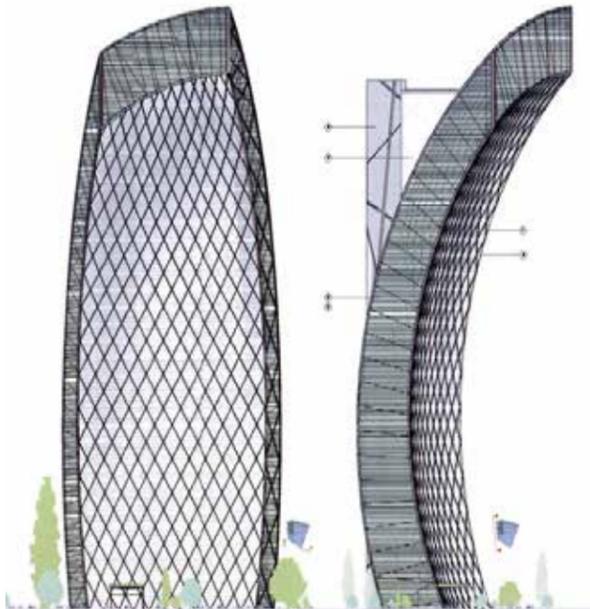


WEST PROSPECTUS

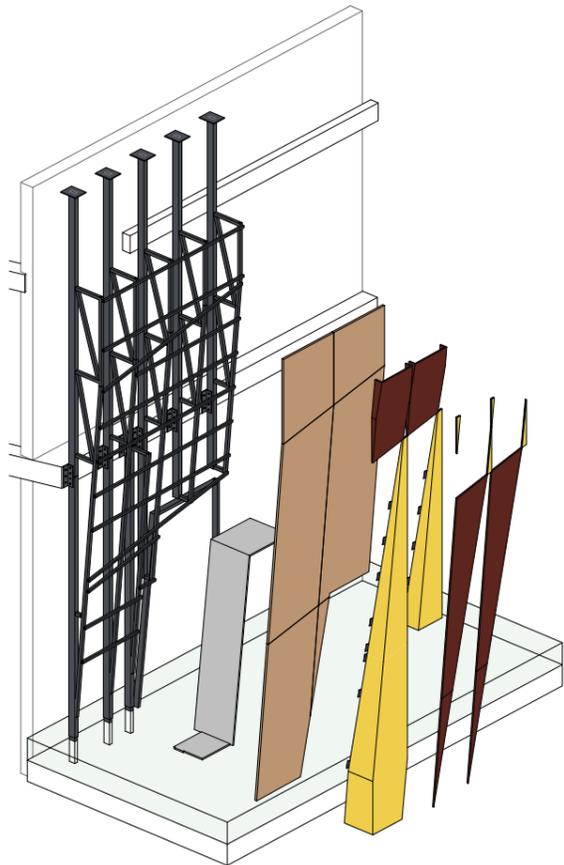


SOUTH PROSPECTUS

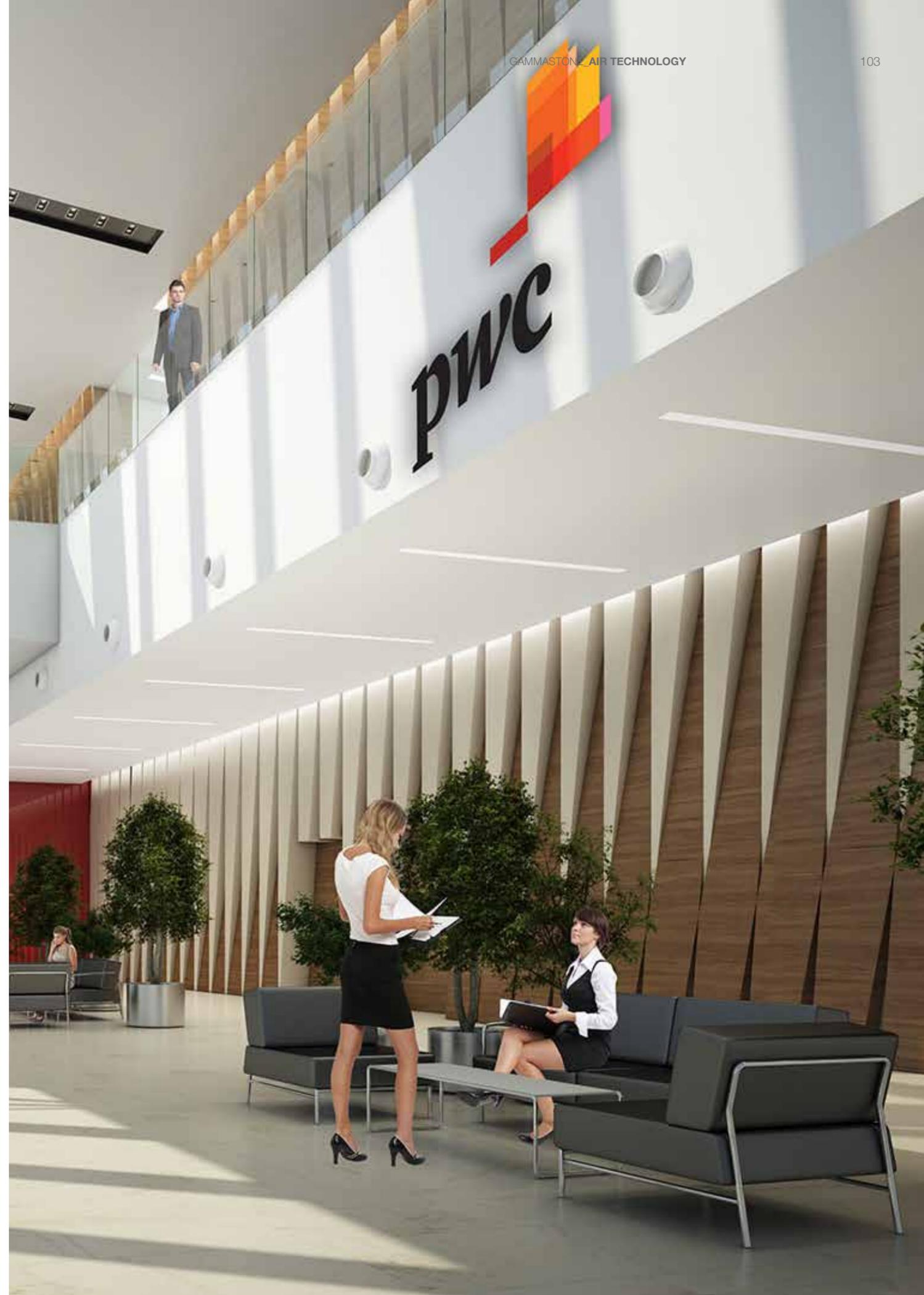




The Renaissance cupola is the basic principle behind Tower Libeskind's concept. As a matter of fact, it is reinterpreted through the concave movement of its elevation and it culminates in the crown, both distinctive elements of the project.



The ground floor of the Tower hosts a highly representative triple height hall, accessible from level -1, where the Shopping District and the M5 underground station are located, as well as from the upper level of the new urban square. There is a special VIP access point in the North area, which directly links to the Tower's elevators. On the lower level, in line with the public space, there is a conference area with three halls, each accommodating 50 seats. The area standing outside the lobby is equipped with an underfloor system so that it can easily become an exhibition space supporting the conference centre or the Tower itself.



**BRICK AIR**



GammaStone BRICK AIR  
Facciavista Longformat

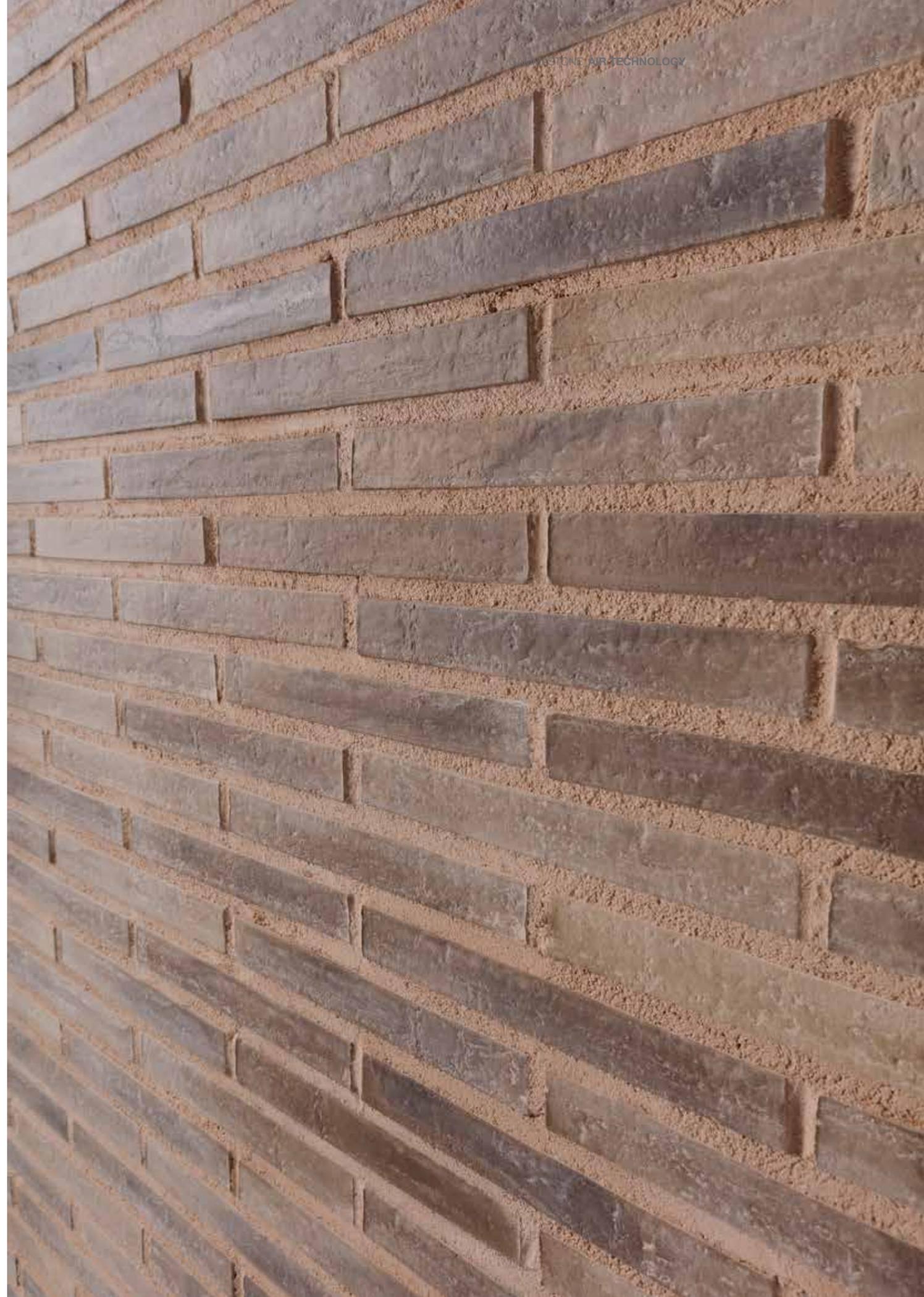
# ESSEX CROSSING 3, NEW YORK

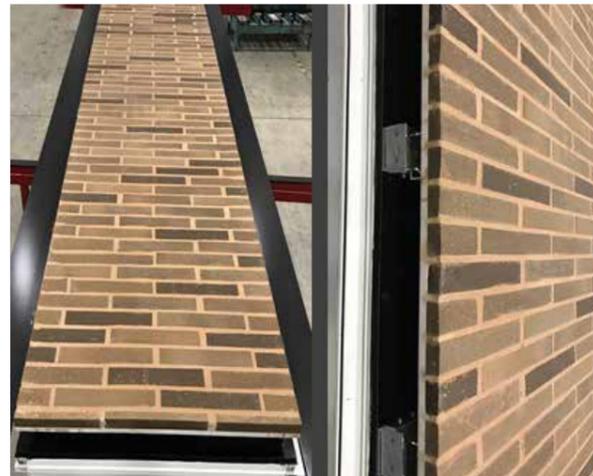
Shopping Center

ARCHITECTURAL DESIGN:  
**CetraRuddy Architecture**

GammaStone BRICK AIR  
Facciavista Longformat

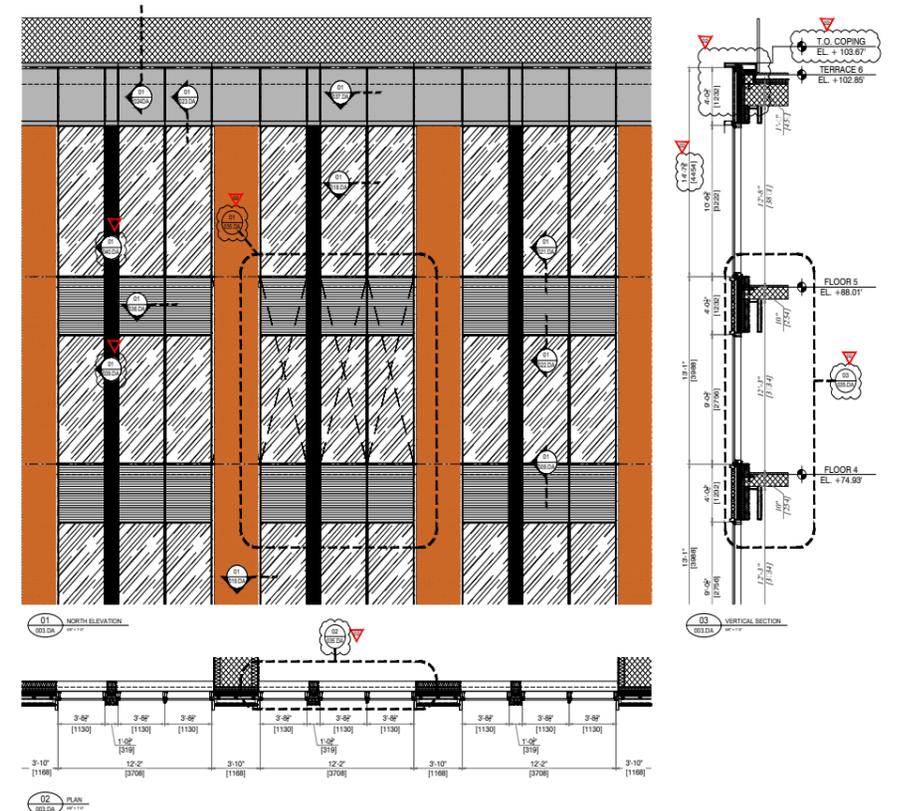
Shopping Center  
New York City  
40°39'40"N 73°56'38"W

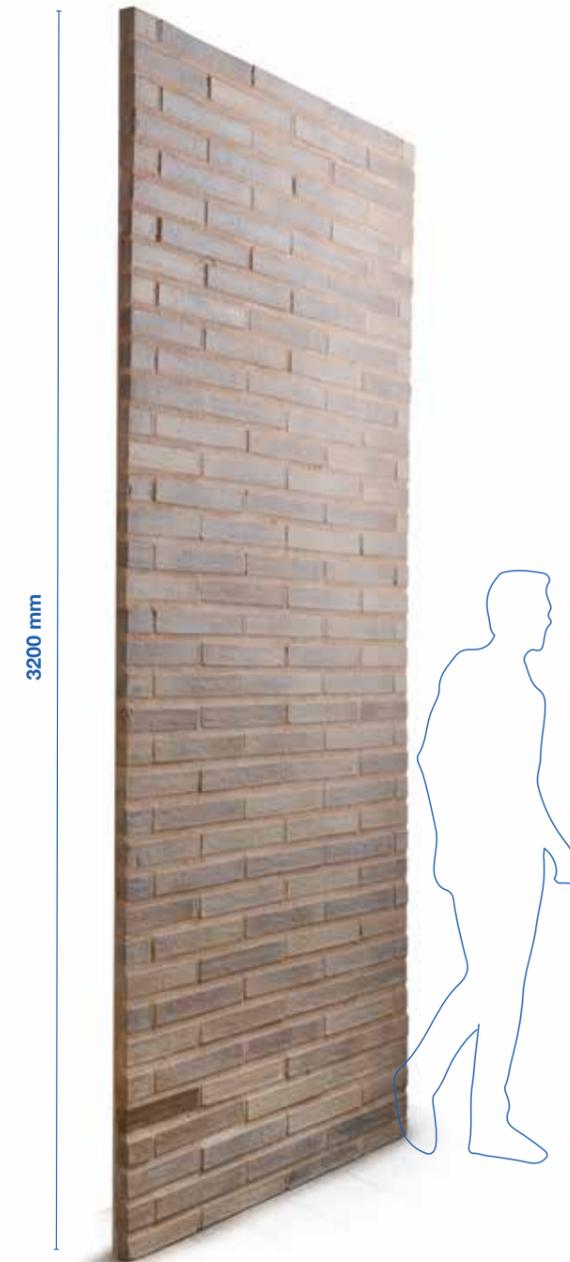




Essex Crossing 3 symbolizes the first model of GammaStone Brick AIR in a curtain wall. Thanks to the collaboration and proficiency of all the cooperating companies, the "Facciavista Longformat" brick paneling is installed in continuous cells. One of the main characteristics of this highly technological product is its visual adaptableness. GammaStone's Brick AIR is produced in an integrated modern line of production followed by various tests.

**PODIUM  
Enlarged Elevation**





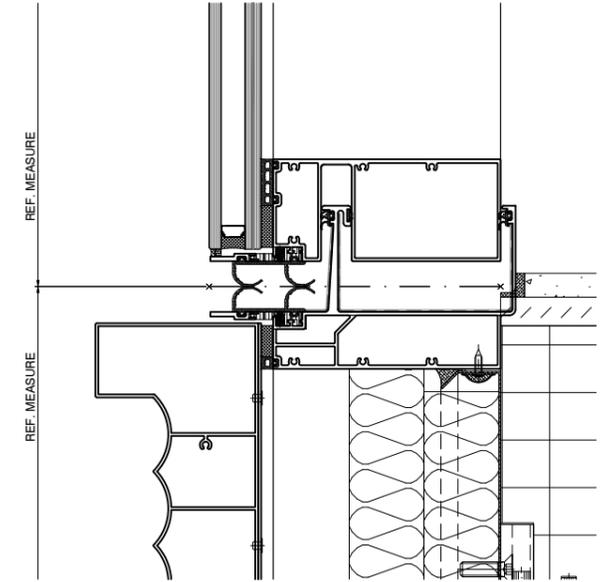
## GAMMASTONE BRICK AIR

GammaStone AIR slabs represent a state-of-the-art solution that guarantees high performance standards and offers an unparalleled aesthetic beauty. The GammaStone Brick AIR solution allows dry installation of Klinker or porcelain

bricks with advantages of a fast installation and beautiful aesthetics. The panel is supplied and pointed with mortar ready for installation. The joints between panels are designed to guarantee a unique effect on the entire facade.



These high-quality control production standards allow a rapid assembly and leave a simple installation for the site.



PODIUM  
Sect. Ref. Measure

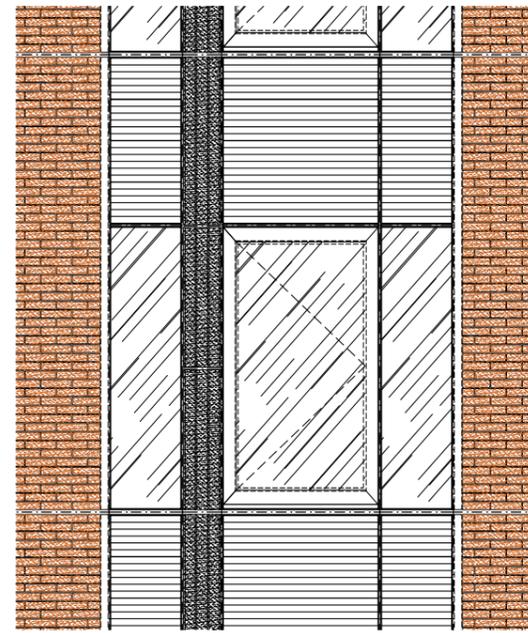
The visual and functional aspects lend themselves to be adapted to the technological and architectural necessities of the building. Therefore, it is a highly oriented product in personalization; In fact, the insertion of strips of different sizes within a single panel makes Essex Crossing 3 a highly oriented in personalization.

An undoubtable feature of this type of façade is that, GammaStone Brick AIR panels are delivered to Curtain Wall manufacturers, which provide the assembly in the cell so a finished product arrives at he site.

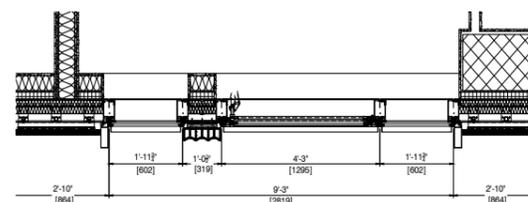




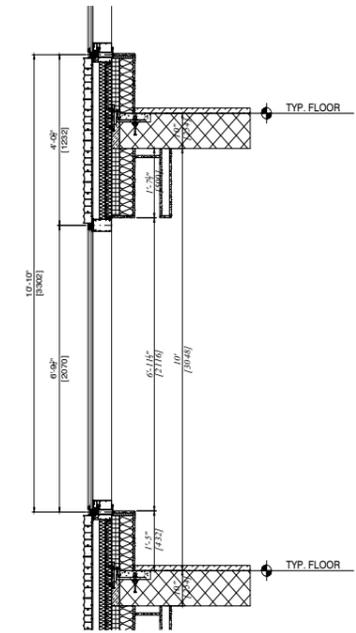
CLIP FOR MECHANICAL FIXING



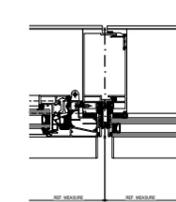
01 NORTH ELEVATION



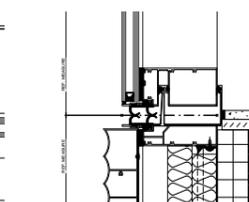
02 PLAN



03 VERTICAL SECTION



04 PLAN REF. MEASURE



05 SECT. REF. MEASURE

TOWER  
TYP. Bay Elevation

The speed of installation, as well as the flexibility of the use of the panels in this project shouldn't be underestimated, since this building is located right in the heart of Manhattan – NYC. GammaStone is pleased and satisfied with having passed this challenge successfully.



**GLASS AIR**

GammaStone GLASS AIR  
Optical White

# COOP ARONA CENTER, MILAN

Renovation of an old building

ARCHITECTURAL DESIGN:

**Guidarini & Salvadeo Architetti Associati**



Watch the video of  
COOP building site

GammaStone  
GLASS AIR  
Optical White

Shopping Center  
Coop, Via Arona 18, Milan  
45°28'58.38" N  
9°9'30.94" E





The Coop. in Via Arona, Milan represents a flawless renovation of an old building which fits perfectly into an urban context close to the center of the city. This restyling demonstrates the high flexibility of the use of GammaStone Glass Air panels. The timeless beauty of the glass provides majesty and elegance to the building.

GammaStone Glass AIR panels are segmented and alternated giving a continuous movement to the entire facade. The result is a visual effect of absolute relevance, which gives dynamism from every angle and perspective; referring to the wave with a modern line project idea, which goes on from Via Arona to Corso Sempione.

GammaStone has proved to meet the expectation always, by applying itself once again with talent and passion.

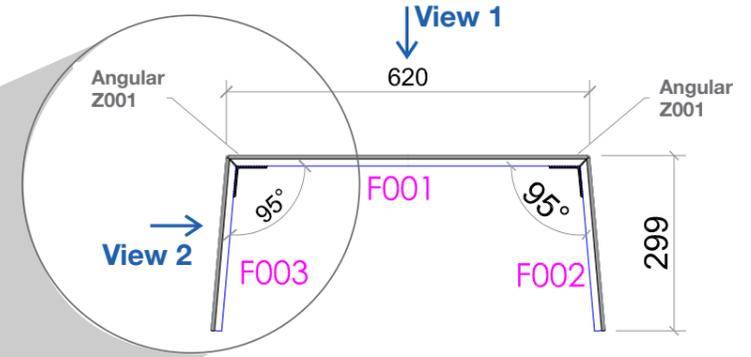
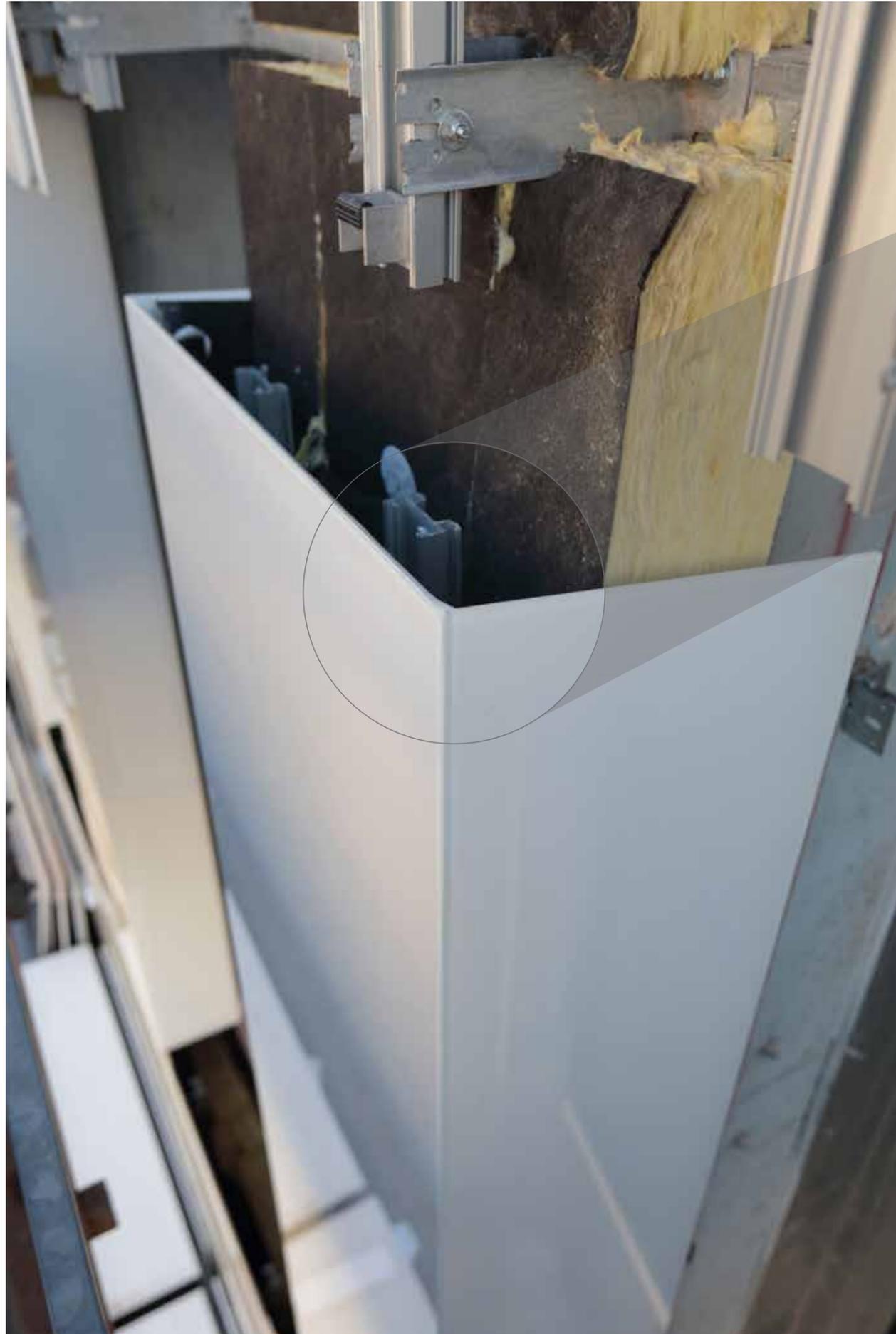


BEFORE

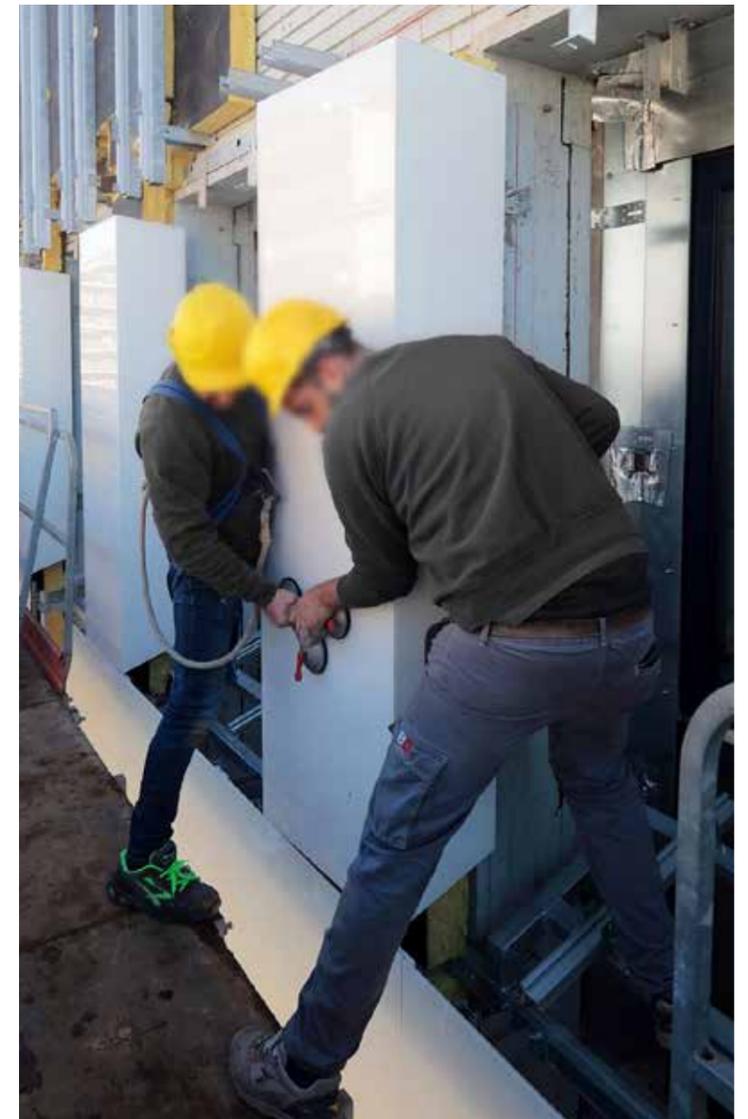




Prospectus Via Arona



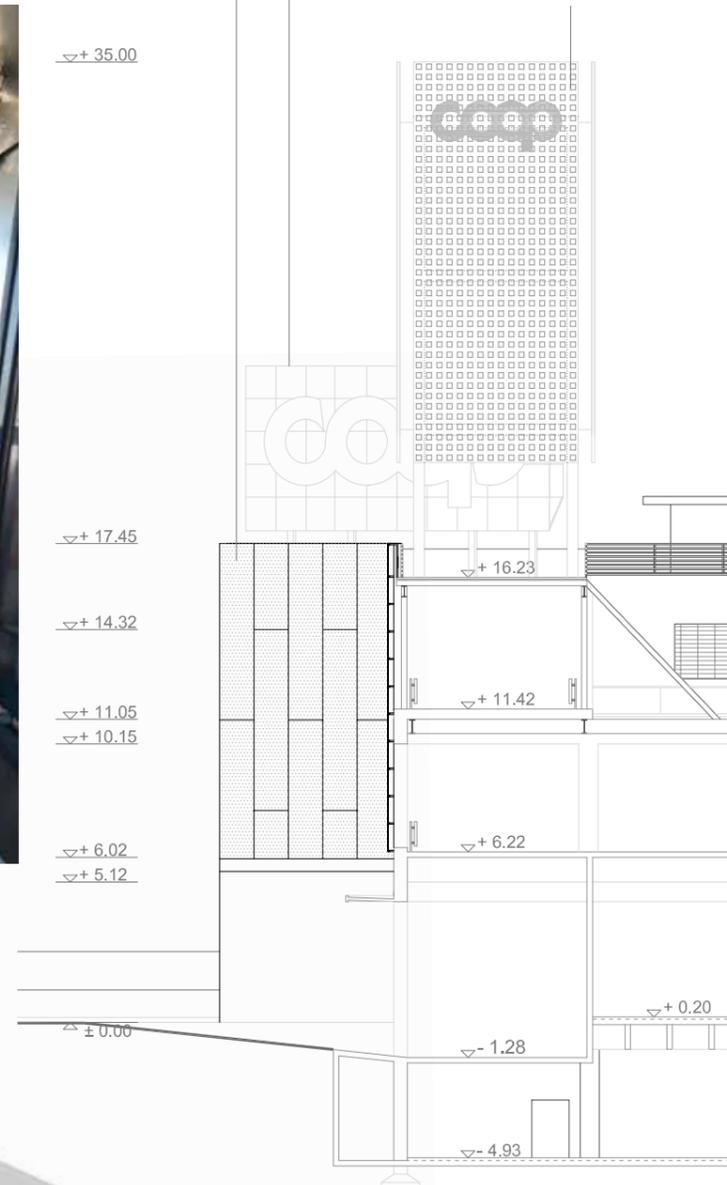
The panels are glued with structural epoxy adhesives and reinforced by metal angle forming a single monolithic architectural element.





Facciata ventilata serie GAMMASTONE GLASS con anima strutturale in acciaio inox, cristallo 33.2 antisfondamento  
Imbotti dello stesso materiale della facciata, con angoli strutturali monolitici

Scritta pubblicitaria in alluminio  
con struttura in tubolari d'acciaio



**A-A Section**

The sinusoidal shape and the curved corner is the main character of the project. The idea of running it using a single color, which enhances the material continuity of the layer should be well-thought-out. The optical white with a mirrored finish follows a unique architectural line but at the same time brings out the well-known and irrefutable Coop. brand with bright tones.



This is a result of a continuous industrial work, based on specific skills and technologies which has been developed over the years and characterized by an artisan finishing by an experienced and professional team. A cutting-edge solution, which GammaStone has shown talent and passion in it.

**NATURAL AIR**



GammaStone NATURAL AIR  
Carrara White Marble

# CHESTNUT TOWER, PHILADELPHIA

Facade and interior cladding

ARCHITECTURAL DESIGN:  
**SITIO**

GammaStone NATURAL AIR  
Carrara White Marble

Chestnut Tower -  
Philadelphia - USA  
40°05'13.56" N  
75°13'40.08" W

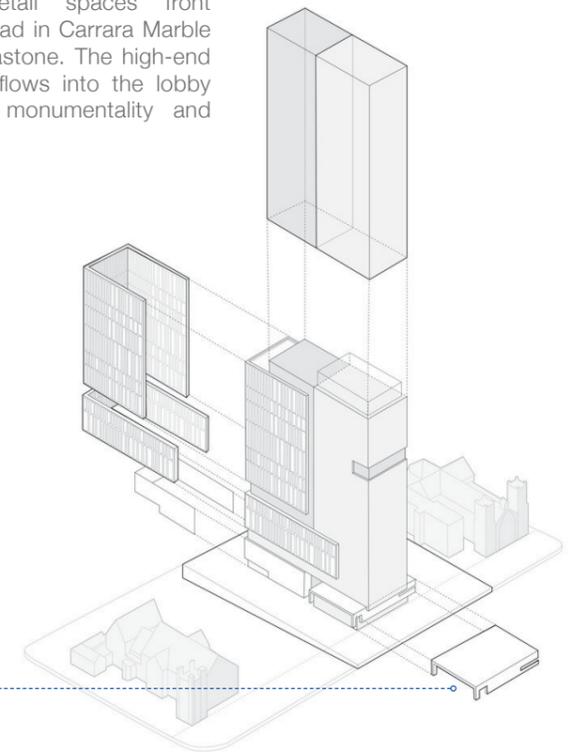




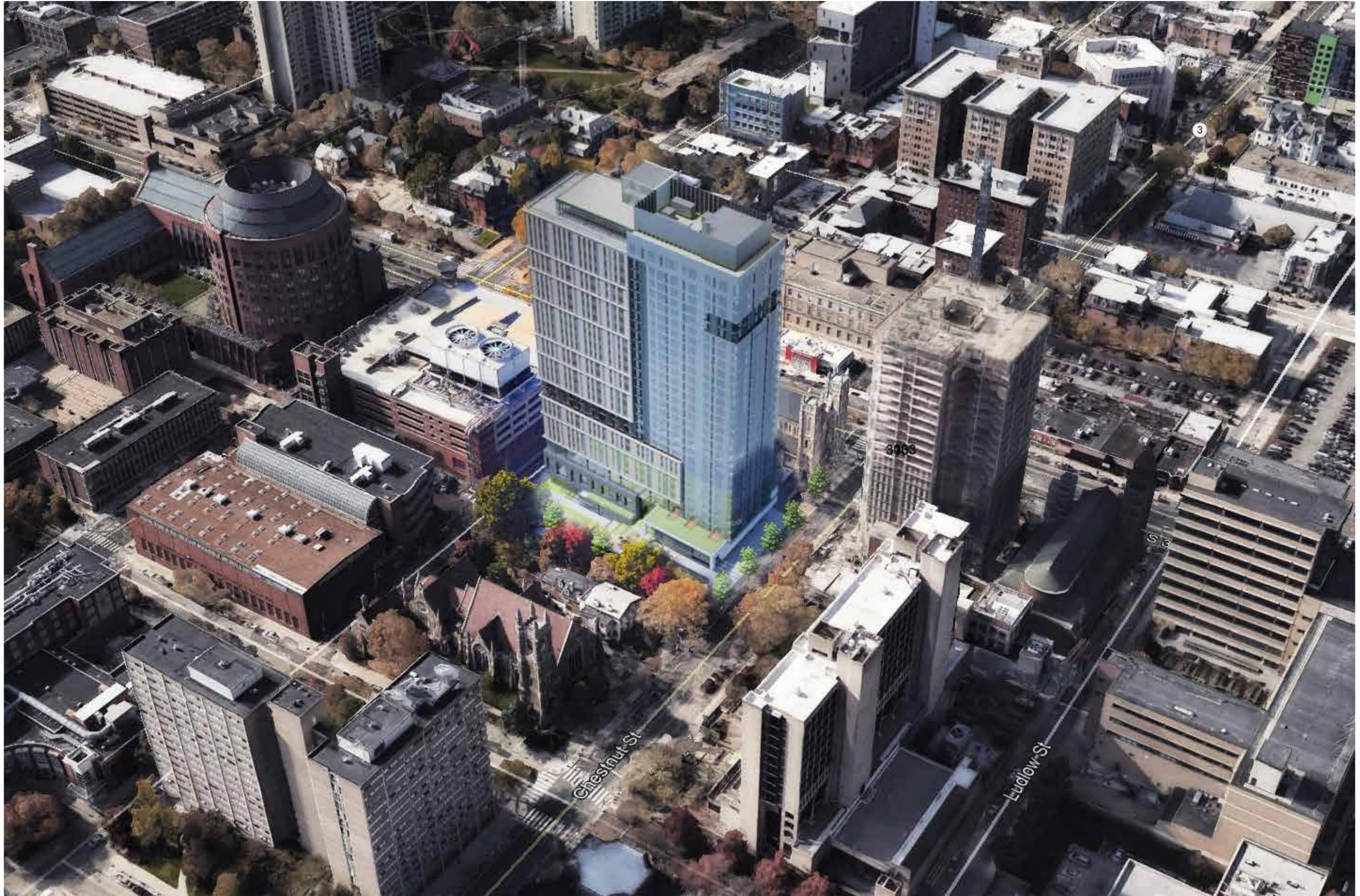
30-STOREY BUILDING  
ENTRANCE AND  
INTERIOR AREAS  
WITH GAMMASTONE  
NATURAL AIR



The Chestnut at University City is a 30-storey multipurpose project in the heart of Philadelphia. The development consists of 405 luxury apartments with amenity spaces and a sky deck pool. Vibrant retail spaces front Chestnut Street clad in Carrara Marble panels by Gammastone. The high-end natural aesthetic flows into the lobby space to imply monumentality and permanence.



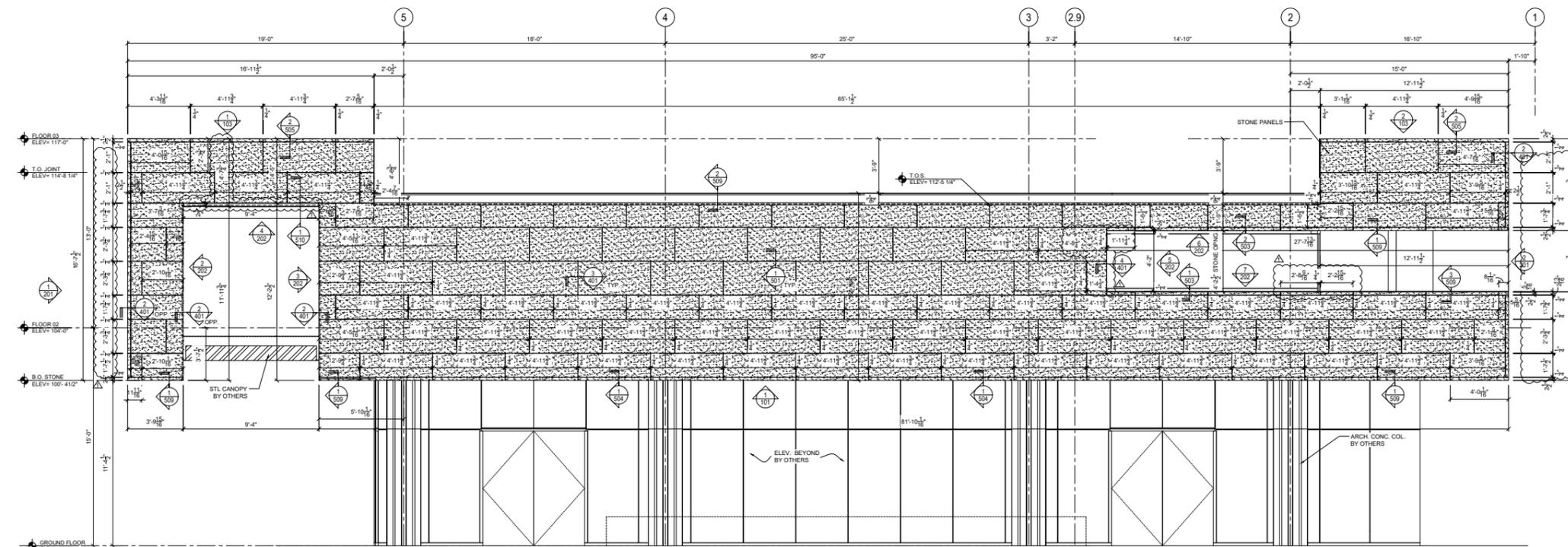
FLOOR 02  
ELEVATION





The development is designed as a “tower-in-the-garden”, with indoor-outdoor spaces providing an elegant setting for gracious urban living at the heart of University City.

The facade is the first element on which the eye falls for a building full of charm. Therefore, a product which gives you several preferences while keeping its quality, resistance and magnificence can be a prime choice.



PARTIAL NORTH ELEVATION



**NATURAL AIR**



GammaStone NATURAL AIR  
Roman Travertine

# INDIA PRIVATE HOUSE

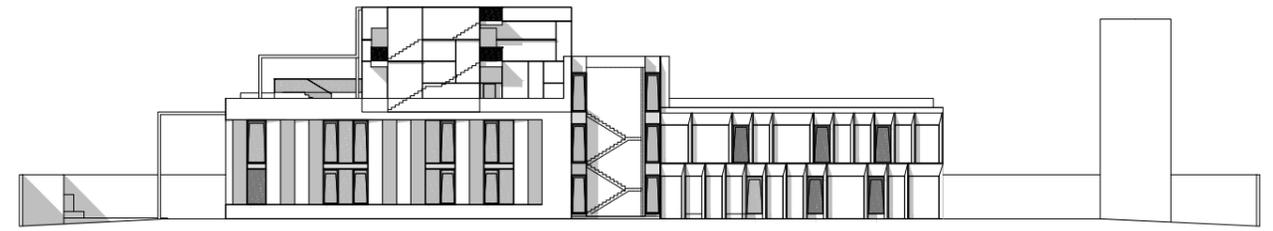
Luxury facade

ARCHITECTURAL DESIGN:  
**PLS Design**

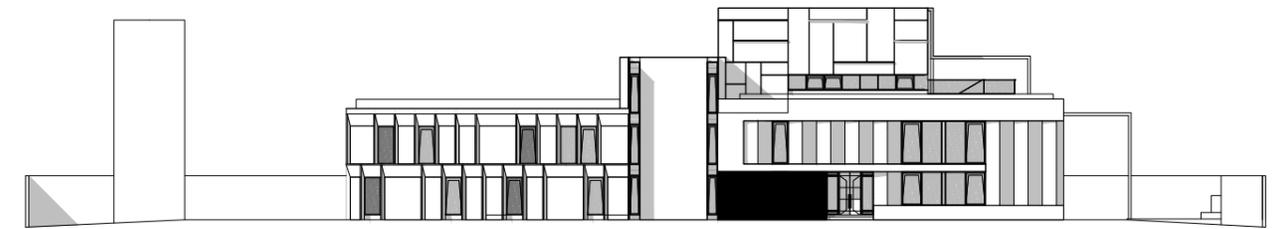
GammaStone Natural AIR  
Roman Travertine

Private Building  
New Delhi  
28°36'N 77°12'E

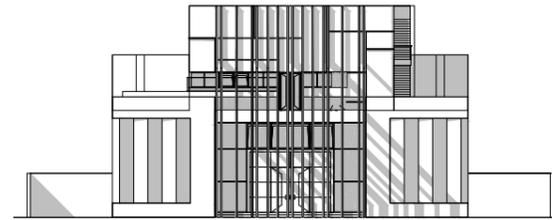




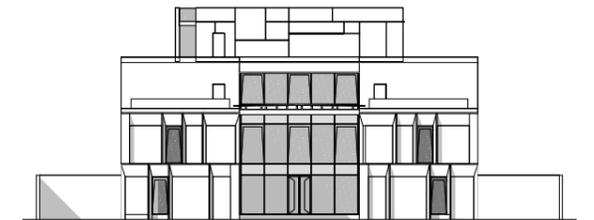
External facades  
EAST Elevation



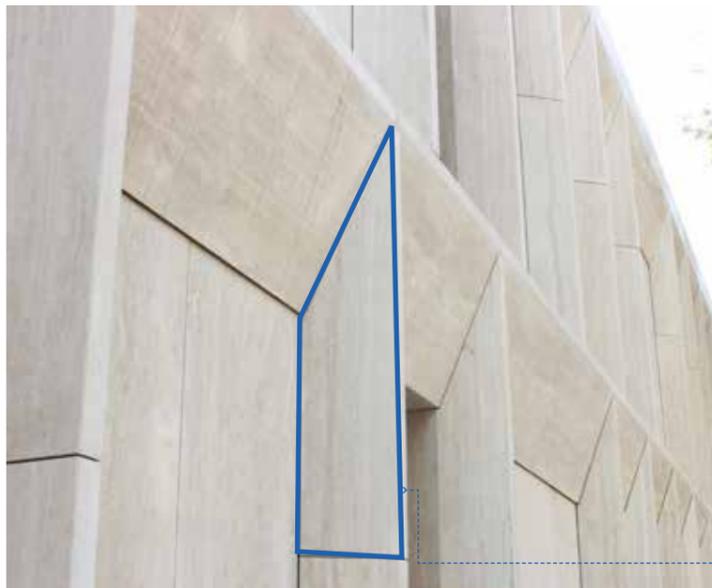
External facades  
WEST Elevation



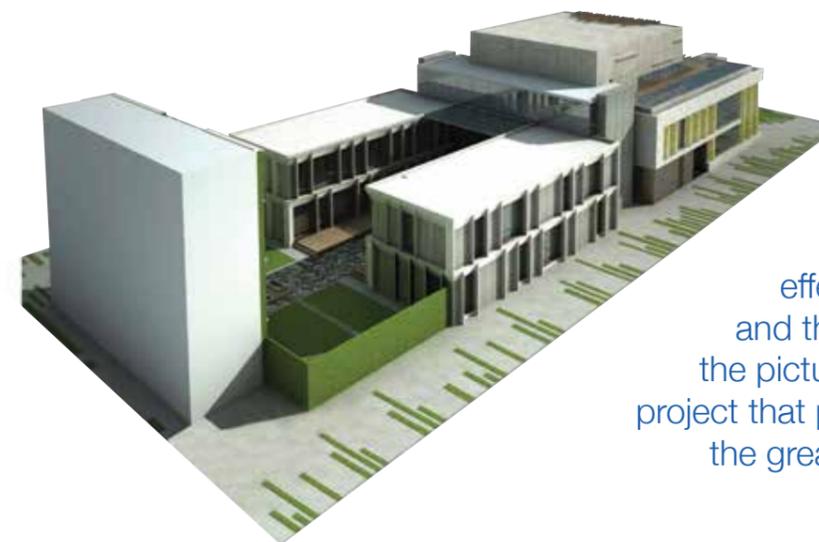
External facades  
SOUTH Elevation



External facades  
NORTH Elevation

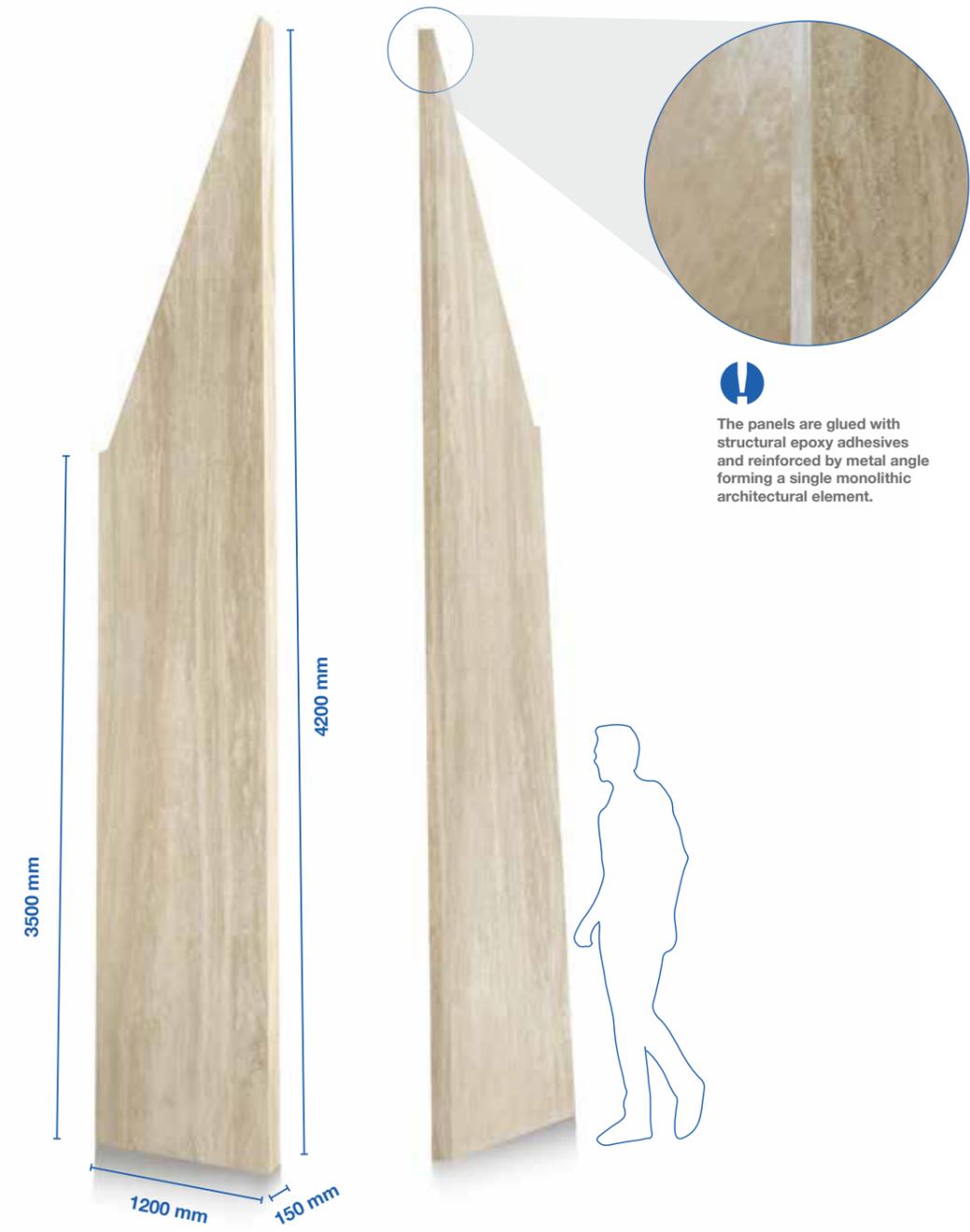
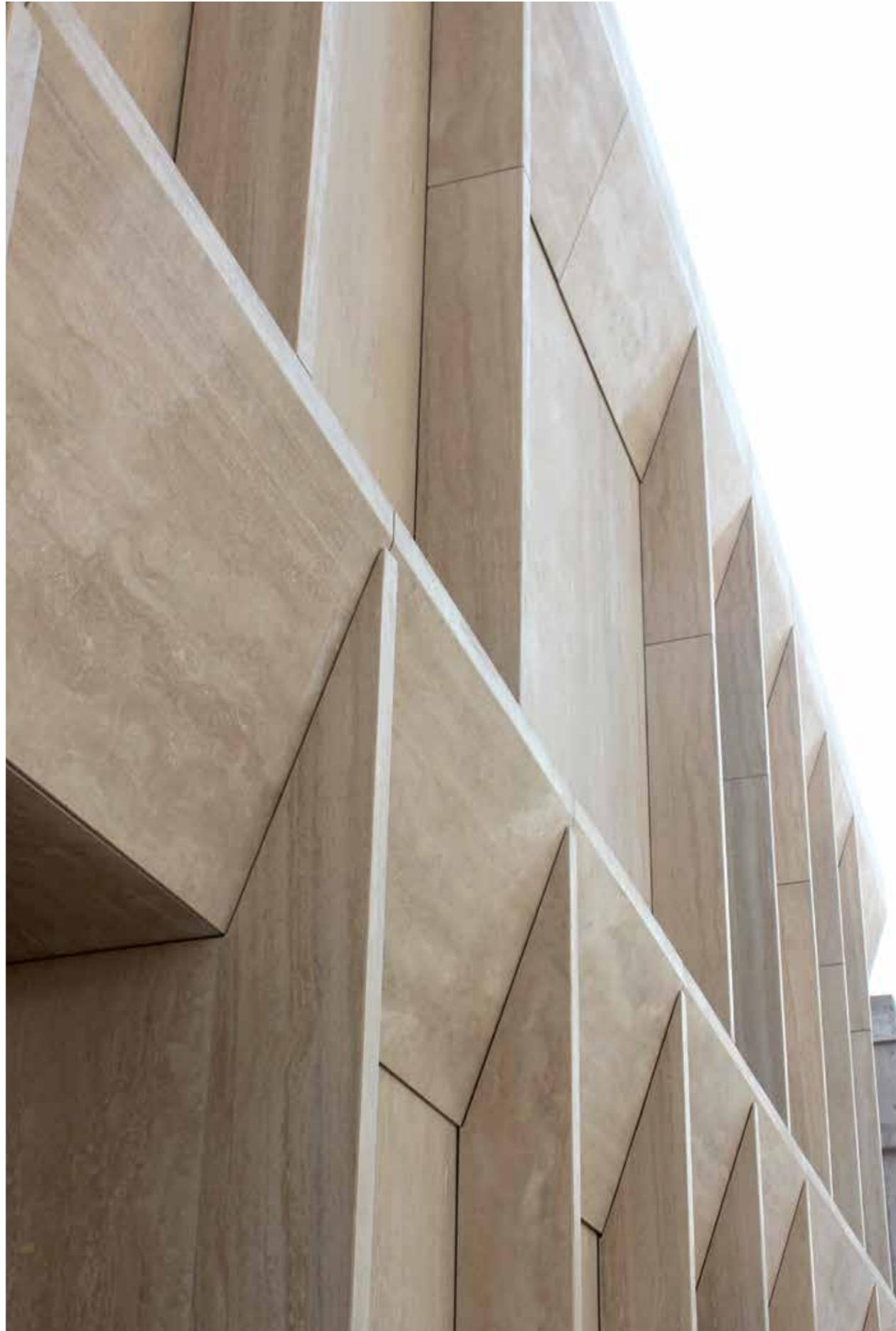


GammaStone Monolithic element  
Natural Air in Roman Travertine  
Rope: 1157 mm  
Height: 2772 mm



The facades of the building, all realized with GAMMASTONE Natural AIR panels made of travertine marble, compose a complex surface with an astonishing monolithic effect. The beauty of the material and the quality of the finish visible in the pictures enhance the quality of the project that portrays superbly the topics of the great Italian architectural tradition.



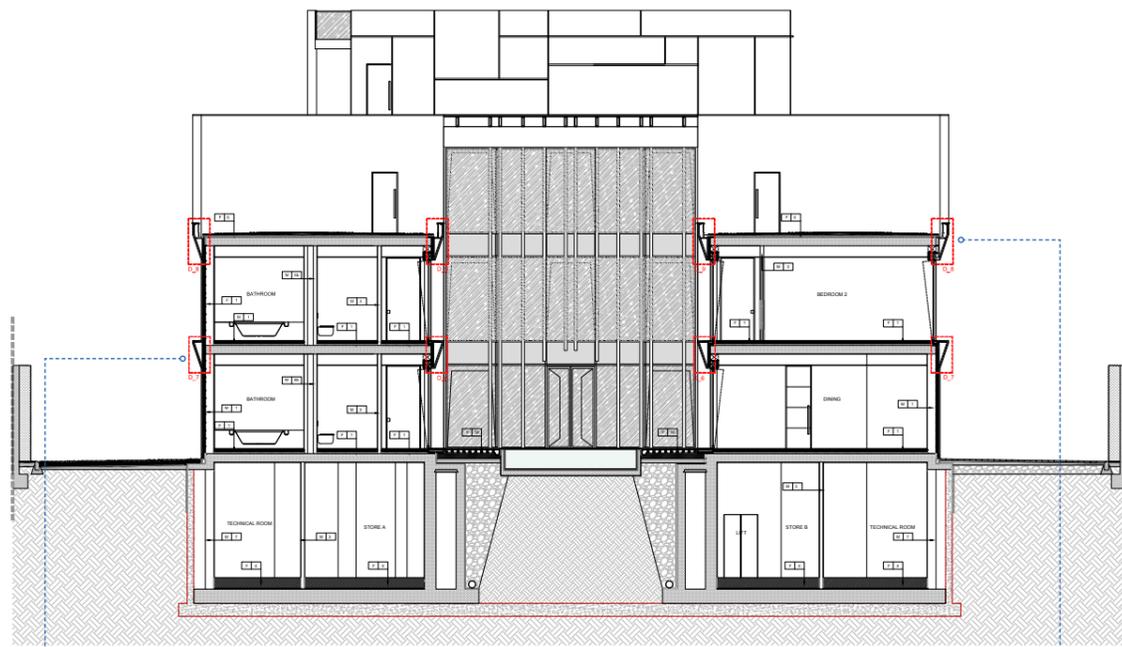


**!**  
 The panels are glued with structural epoxy adhesives and reinforced by metal angle forming a single monolithic architectural element.

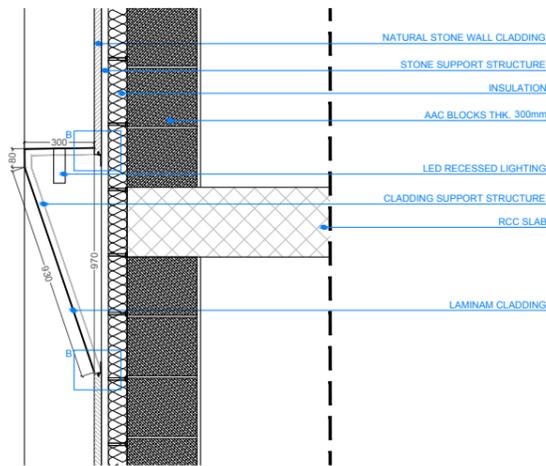
## MONOLITHIC ARCHITECTURAL ELEMENTS

The GammaStone AIR solution in natural stone allows the mechanical installation of large panel sizes formed with marble, granite, limestone or travertine. It can be used to make beams,

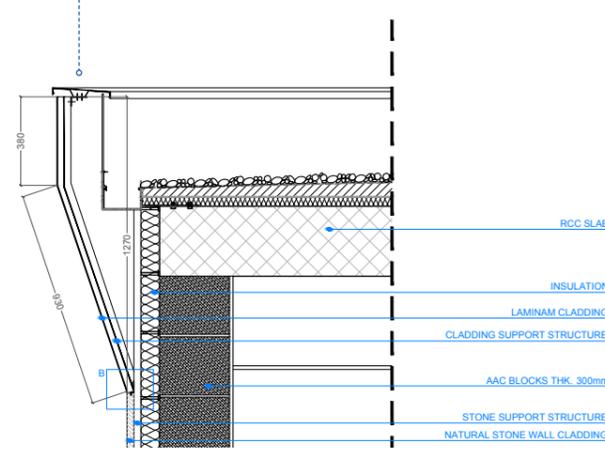
columns and any other architectural element with a monolithic result, creating the one piece effect. Panel sizes depend on the block size, up to 3200x1500 mm.



SECTION CC



DETAIL 7



DETAIL 8



**10 MM** THICK ROMAN TRAVERTINE SLABS  
3000x1300 MM



Natural stones give the buildings a beauty that defies the centuries, emitting magnificence and sophistication.

The aura of eternity guaranteed by the Roman Travertine is well known throughout the world. This project effectively proves that tradition and innovation can be combined to provide an impressive aesthetic result together with a high quality of living.



**NATURAL AIR**



GammaStone NATURAL AIR  
Limestone Mocha Cream Fine Grain

# 140 WEST 24<sup>TH</sup> ST, NEW YORK

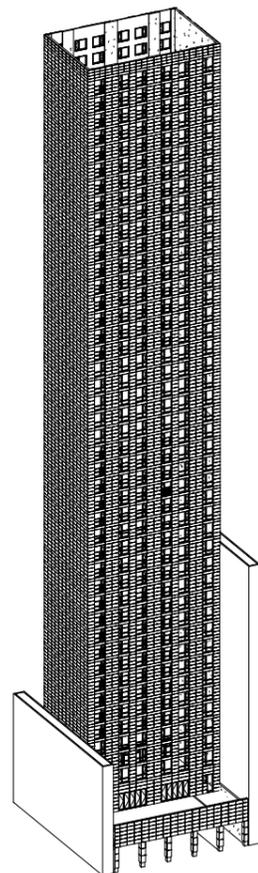
Exterior facade

ARCHITECTURAL DESIGN:  
**Gene Kaufman Architect PC**

GammaStone Natural AIR  
Limestone Mocha Cream  
Fine Grain

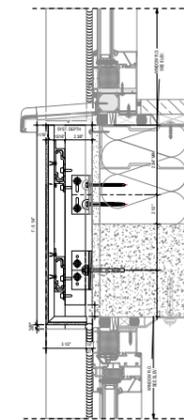
140 West 24<sup>th</sup> St,  
New York - USA  
40°44'38.83"N - 73°59'39.19"W



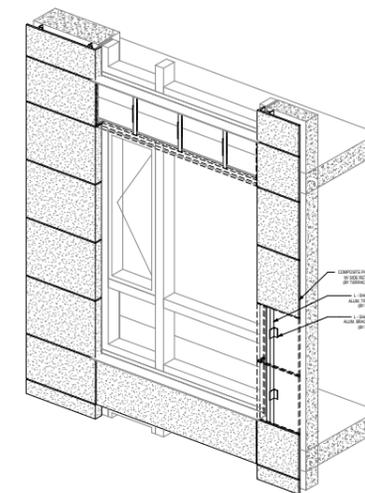


One of the tallest Marriott Springhill Suites/ Townplace hotels in the country standing at 46 stories with over 500 rooms, this dual brand Marriott hotel has sweeping city views to the north and south including of the Empire State Building and the Freedom Tower.

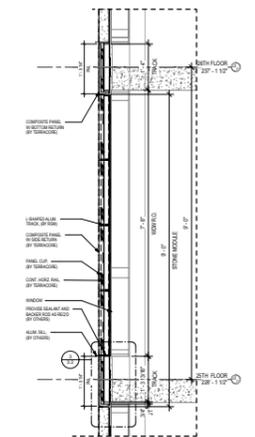
This 45 story hotel rising out of New York's Chelsea neighborhood can be seen from miles away as it reaches high above the neighboring buildings. With such a prominent exposure on all 4 sides, the design required a natural stone exterior to anchor it into the surrounding context. Also the façade was required to have all cladding and exterior insulation layers within only a 4" total system depth, while having some depth to account for tolerances on a very tall concrete superstructure.



3 N ELEV. SECTION 2



2 N ELEV. 3D SECTION



2 N ELEV. - SECTION



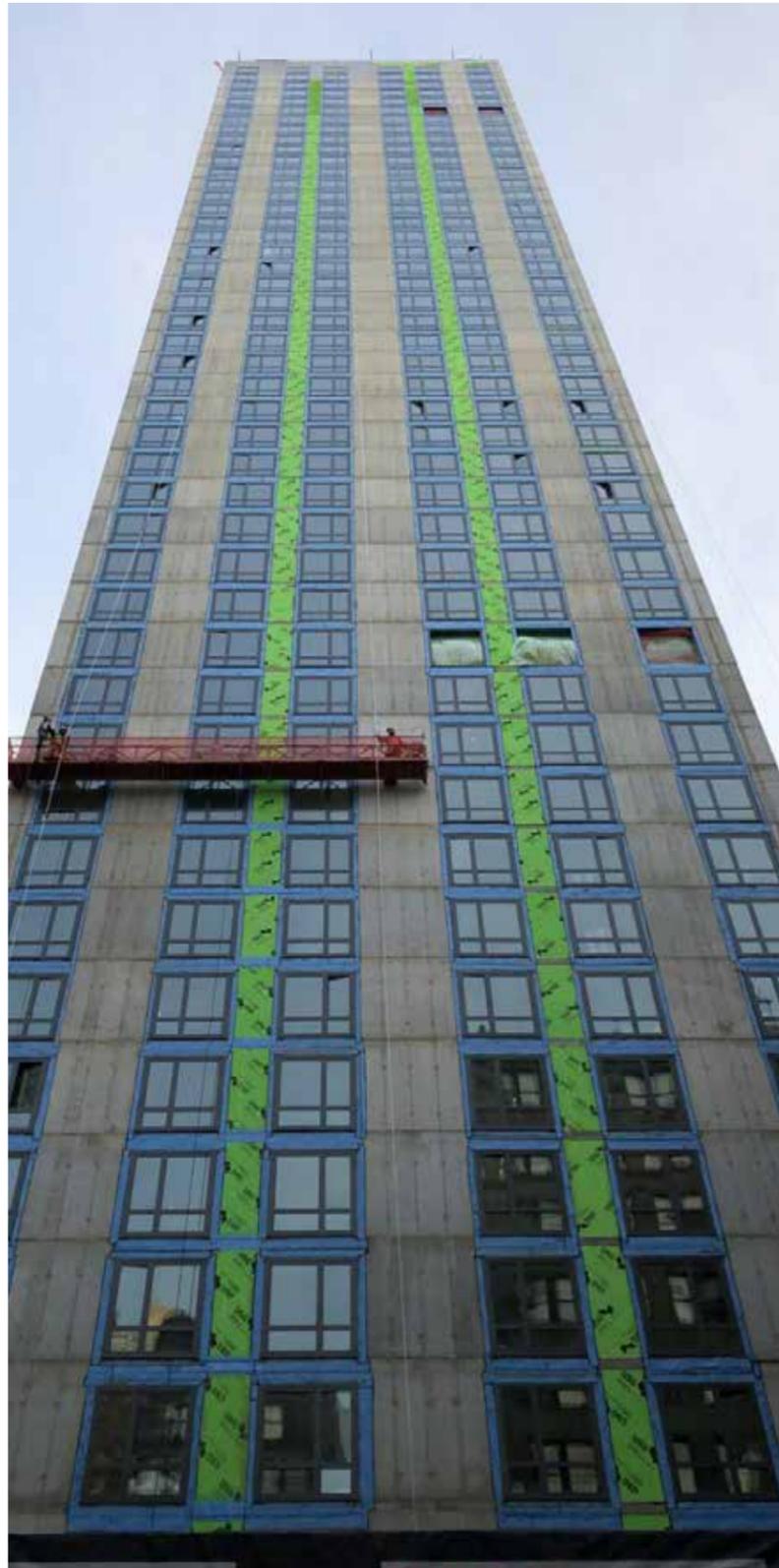


## GAMMASTONE NATURAL AIR

Gammastone Natural AIR with beige Portuguese Limestone of 6mm thickness allows the natural stone to be utilized while meeting today's strict energy requirements. The unique ability of GammaStone to make special monolithic elements ready for installation contributes to the indisputable success of GammaStone AIR panels worldwide. They are the result of substantial investments in research and development, for advanced solutions; a philosophy that contributes to study and patent innovative construction systems.

The elements as corners, soffits, ceilings, columns, beams, etc. are assembled entirely in our laboratories and are installed with extreme simplicity common anchorage systems. This system allows to produce large and surprising light architectural geometric elements, impossible to realize with traditional products. All GammaStone AIR artifacts have a real monolithic appearance and allow architects to realize highly complex elements without neglecting the minimum details.

# 45 STORY BUILDING WITH A GAMMASTONE NATURAL AIR FACADE



The facades of the building, all realized with GAMMASTONE Natural AIR panels made of Limestone Mocha Cream, compose a complex surface with an astonishing monolithic effect. The beauty of the material and the quality of the finish visible in the pictures enhance the quality of the project that portrays superbly the topics of the great Italian architectural tradition.



**6 MM** STONE THICKNESS

### NATURAL AIR



  
**archiproducts**  
 DESIGN AWARDS  
 WINNER 2018

GammaStone GRES AIR  
 Pietra Limestone

Buffalo, NY  
 42°54'17"N  
 78°50'58"W

GammaStone GRES AIR  
 Pietra Limestone



## RESIDENCE INN

### Hotel Restyling

The renowned Marriott chain offers a modern concept of welcoming its customers. The essential lines and measured proportions of the building are a spokesman of sobriety and balance. The renovation is done by GammaStone Air; starting from the architectural design and continuing with the covering of the entire façade thanks to ultralight and large GammaStone Gres AIR panels (up to 2800mm). The realization of recurring monolithic elements characterize the entire façade and together with the singular slotted ceiling for the insertion of LED lights, give modernity and minimalism to the project.

Residence Inn by Marriott in Buffalo makes a stylistically winning choice and GammaStone AIR once again manages to give the right personality to the final result, taking full advantage of the potential that has always distinguished this revolutionary product.



The simplicity labels the hotel effectively as one of the most sought-after of the area and suitable primarily for business travelers. Stone-effect porcelain gres is clearly not a random choice because it has been specially designed by the designer to bring the entire renovation back to the principle of aesthetic functionality without neglecting the robustness of the materials involved.



### NATURAL AIR



## STUDENT RESIDENCE

British stone and Italian technology

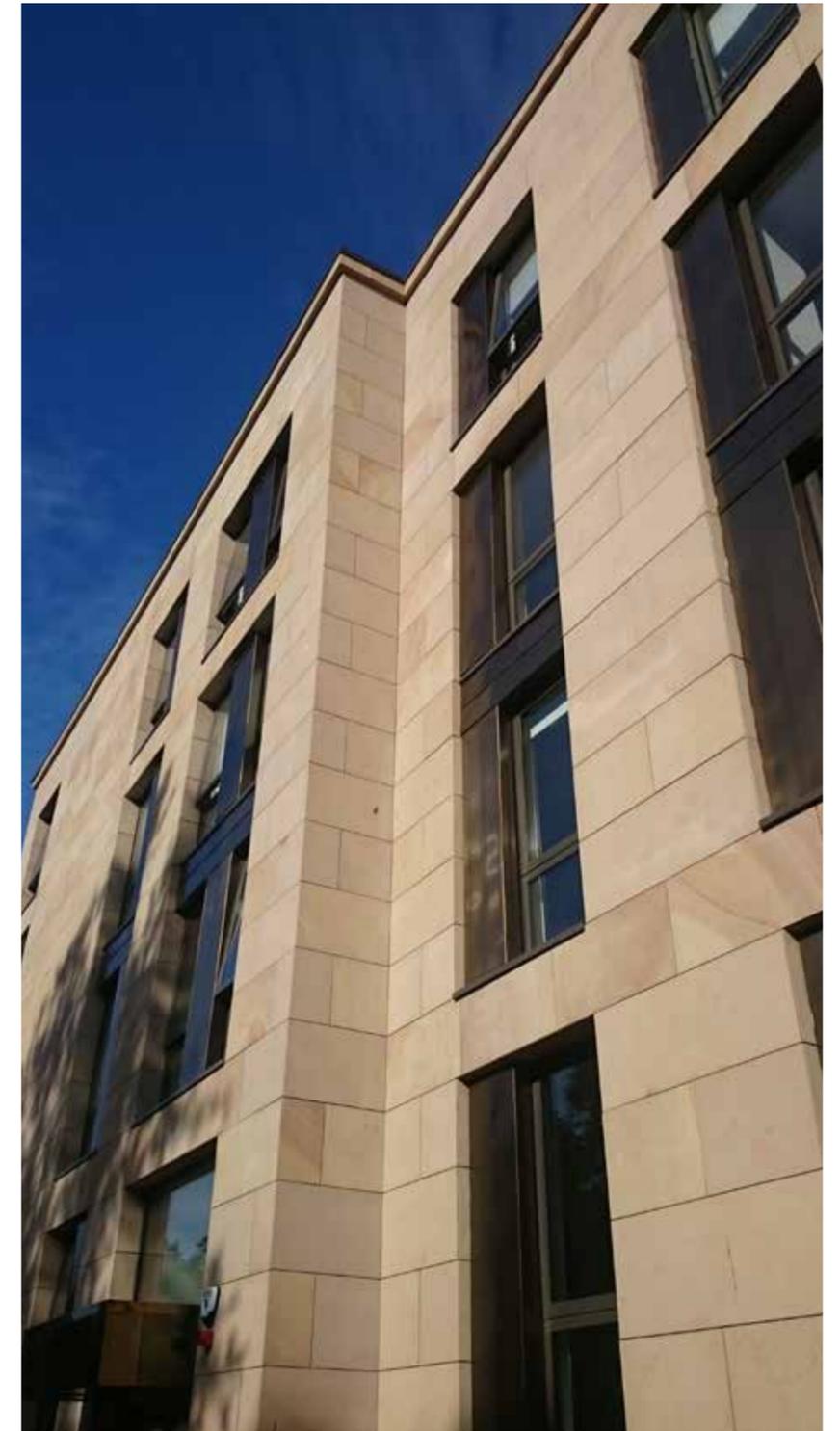
GammaStone NATURAL AIR Stanton Moore Sandstone

Even the most traditional form can hide an innovative solution. This architectural solution achieves energy efficiency and preserve the supporting structures and the interiors from the weather conditions. In this project the usage of GammaStone Natural Air panels in Stanton Moore Sandstone has ensured the harmonious of the building in the architectural surrounding, without giving up the care for the finishes and the use of original and effective aesthetic solutions for the entrance and for the windows.

GammaStone NATURAL AIR Stanton Moore Sandstone

Student Residence  
Edinburgh Scotland UK  
55°56'58"N 3°09'37"W

The building in the picture shows how it is possible to insert an innovative building in an urban landscape characterized by a strong links with the local tradition.



### NATURAL AIR

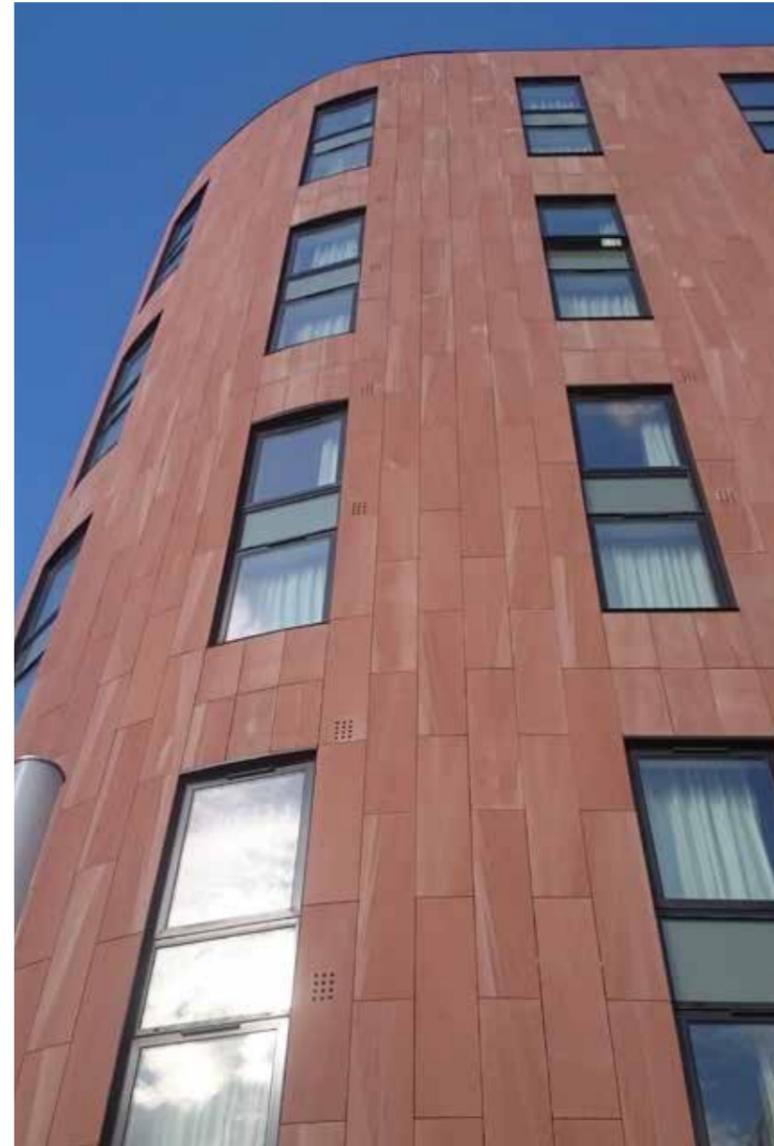
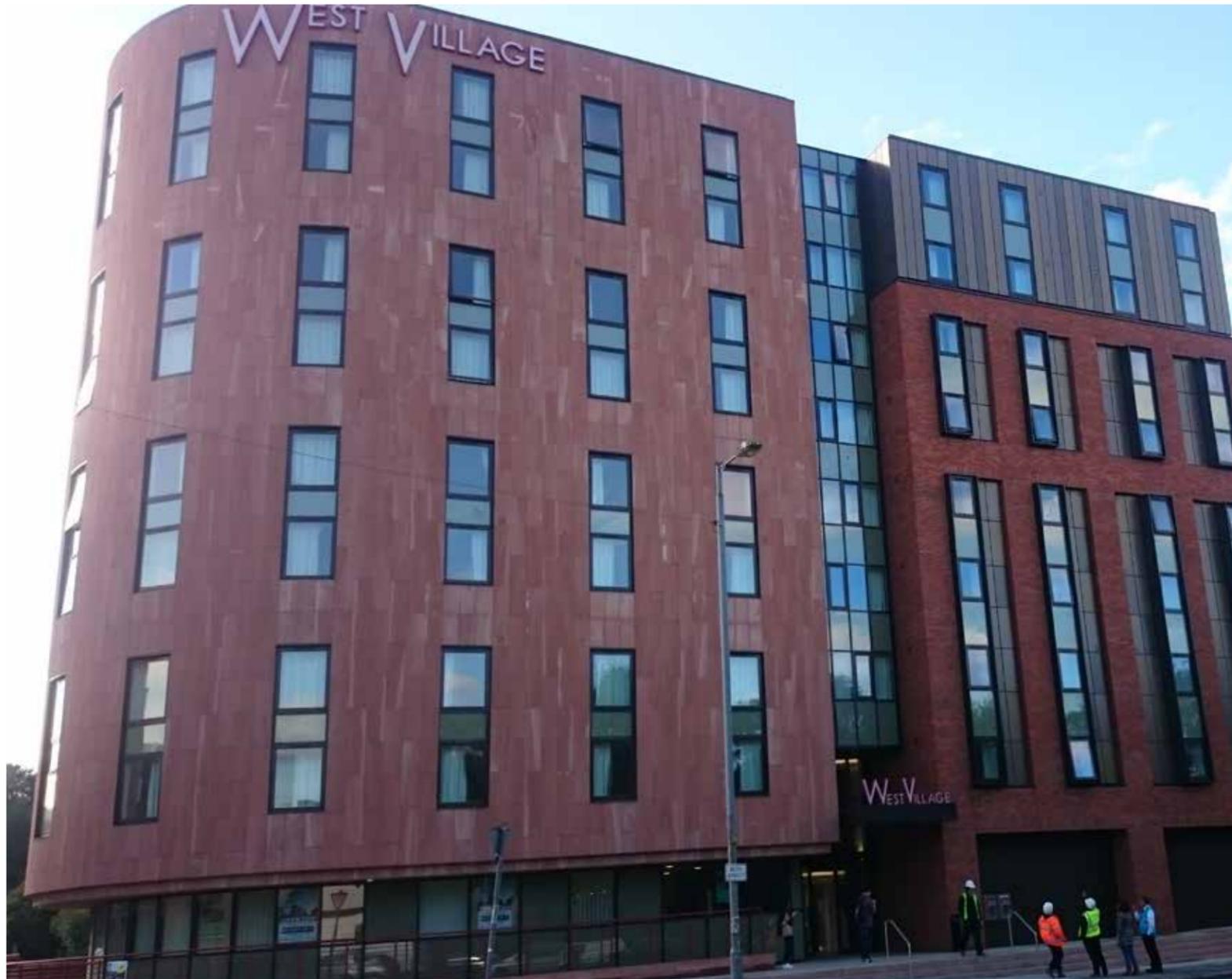


GammaStone NATURAL AIR  
Locharbriggs Red Sandstone

## STUDENT RESIDENCE

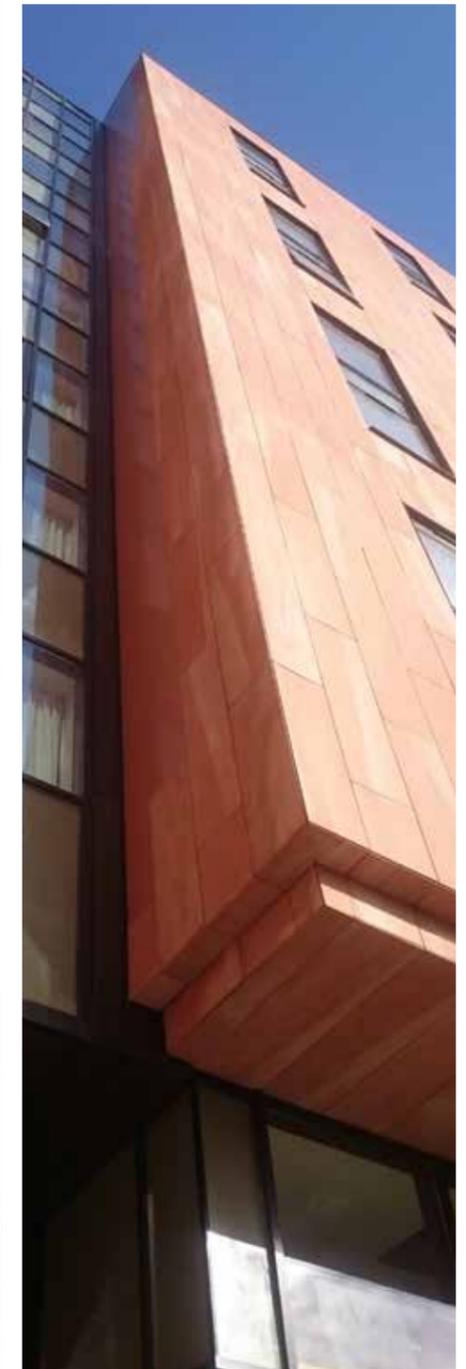
### Ventilated facade

Innovative University accommodation in Scotland. "Beith Street" project involved the manufacturing of more than 2.000 panels for the ventilated facade of a new building inside the complex of "West Village", a student residence located a few hundred meters from the University of Glasgow. Natural GammaStone AIR enabled the designer to create a modern and energy efficient building in perfect harmony with the surrounding architectural environment and the Scottish urban landscape. The adoption of the ventilated facade is very effective in counteracting the high humidity rate of the local weather and, moreover, the usage of local stone facilitated the inclusion of the new building in the old complex without preventing innovation, also from the point of view of design.



GammaStone  
NATURAL AIR  
Locharbriggs  
Red Sandstone

Student Residence  
Glasgow Scotland UK  
55°56'58"N 3°09'37"E



The flexibility and the ease of installation of GAMMASTONE AIR made possible the installation of a curved facade due to the relatively small size of the individual panels.



**NATURAL AIR**



GammaStone NATURAL AIR  
Este Light Travertine

LINCOLN CENTER,  
NEW YORK  
Top floor facade renovation

ARCHITECTURAL DESIGN:  
**David Geffen Hall**

GammaStone Natural AIR  
Roman Travertine

Lincoln Center  
New York - USA  
40°46'26.4"N - 73°58'55.2"W





Este Light Travertine of 60mm used in the 1960s

Now instead of very heavy dimensional slabs, the new areas will utilize 1" total thickness panels with only 12mm of stone.



### TOP FLOOR FACADE RENOVATION OF THE "LINCOLN CENTER FOR THE PERFORMING ARTS" WITH GAMMASTONE NATURAL AIR

The Lincoln Center for the Performing Arts in New York City is world renowned for its architectural prominence and beautiful natural travertine facades. The original campus was completed in the 1960's using Este Light Travertine 6cm quarried in central Italy. Over time weathering has caused some areas to require extensive maintenance and replacement. Now in 2020 the trustees of Lincoln Center have sought a more advanced solution for replacement while maintaining the original aesthetic and feel of the full stone thickness. Gammastone natural air system is being utilized with new stone from the very same stone quarry as the original pieces from 60 years ago.



1959. Lincoln Center for the Performing Arts during completion (New York City, New York, USA)





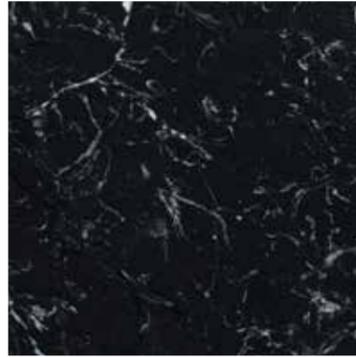
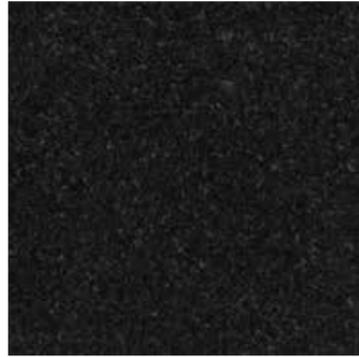
GammaStone Natural AIR  
 in Este Light Travertine  
 Width: 2' - 9 13/16" - 860 mm  
 Height: 2' - 4 1/4" - 1330 mm



This thickness is enough to maintain all details of the open pores of the stone while utilizing rainscreen technology to make panels lighter and more readily able to shed water and hold up to harsh seasons for many years to come.



NATURAL AIR



GammaStone NATURAL AIR  
Black Zimbabwe Granite

GammaStone NATURAL AIR  
Black Marquinia Marble



BOUTIQUE PRADA  
The charm of the black finish  
for an Italian fashion house

GammaStone  
NATURAL AIR  
Black Zimbabwe Granite

Boutique Prada Panama  
8°37'N 80°22'W

The deep and absolute black is often associated with class, luxury and elegance, in fashion as well as in architecture. GAMMASTONE interpreted this timeless trend with for a Prada boutique in Panama. In this project, we wanted to honor this great Italian brand through the use of a precious material that enhances the distinction and exclusivity of Prada. On the other hand, this applications also demonstrates the flexibility of the panels GAMMASTONE Natural Air: Zimbabwe Black granite for Panama and Marquina Black Marble for Amsterdam, that can perfectly meets the needs of functionality and aesthetic value even on small surfaces and inside a commercial building.

GammaStone  
NATURAL AIR  
Black Marquinia Marble

Boutique Prada Amsterdam  
52°22'N 4°52'E

## NATURAL AIR



GammaStone NATURAL AIR  
Jura Limestone Grey

GammaStone  
NATURAL AIR  
Jura Limestone Grey

Cavendish House  
Norwich UK  
52°37'41"N 1°17'57"E

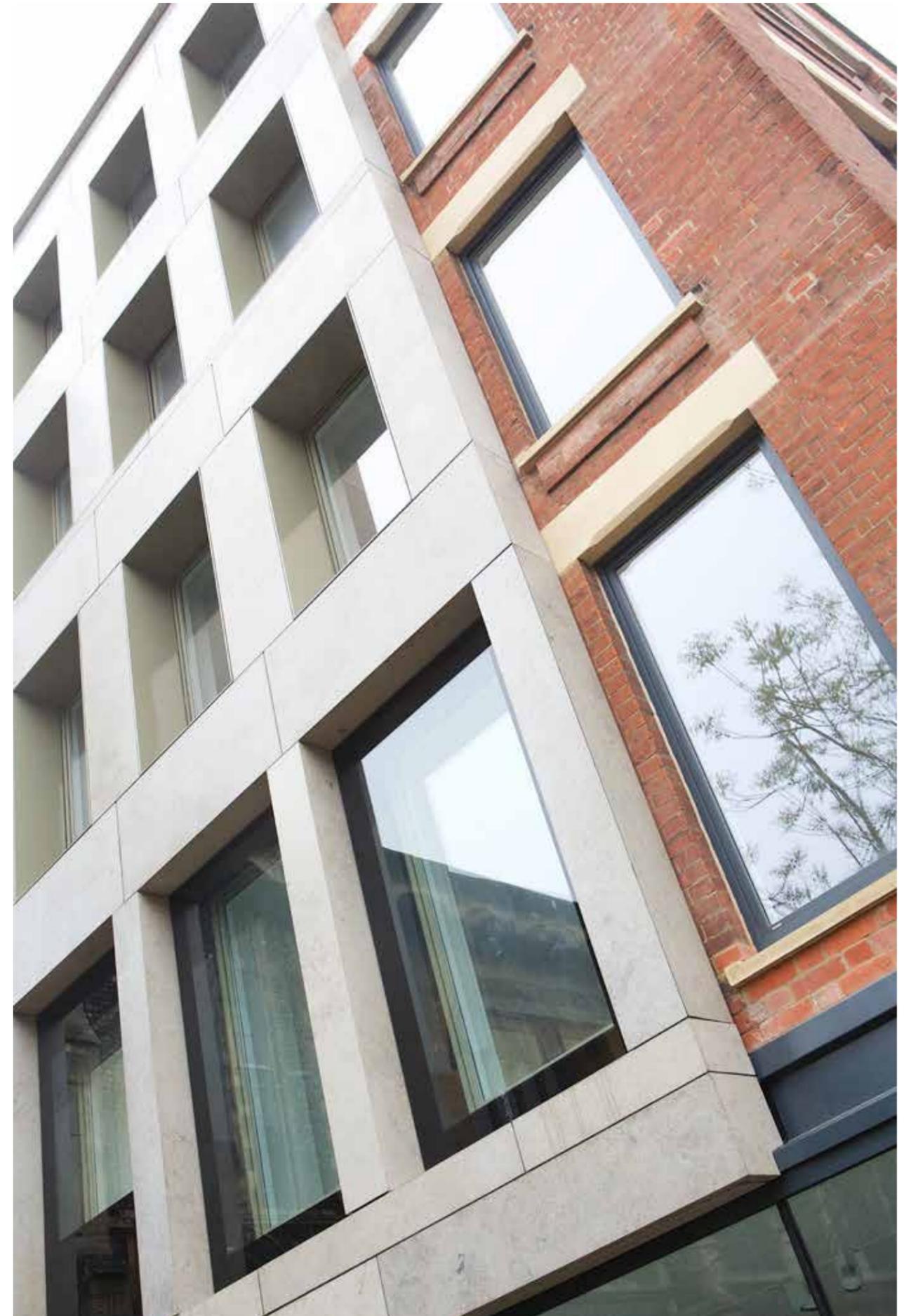
## CAVENDISH HOUSE

### Great esthetic effect

Simple design and pleasant urban landscape go hand in hand with the quality of living. This is the vision inspiring Cavendish House project in Norwich UK. The harmonious integration of the old brick structure and the new ventilated facade made up with GammaStone panels has been guaranteed by the rational shapes of the building and by the solemnity of the stone (Jura limestone grey). Thanks to its foaming patented technology, GammaStone achieved significant results in terms of continuity of the material in this façade system. In other words, the panels installed in the façade are large, despite the considerable weight of the natural stone used for this project. Moreover, the quality of the finish has allowed to bypass the technical problems deriving from the high dimensional disparity between the elements of many corners of the facade. Remarkably GammaStone realized non monolithic corners of great esthetic effect simply combining the different elements and providing a separate anchorage to the support structure for each element.



A further peculiar feature of this facade comes from the natural stone that contains within the fossils of some ancient marine organisms. Those fossils are visible in some parts of the façade, making this building even more exceptional and unique all around the world.



### NATURAL AIR



GammaStone NATURAL AIR Carrara White Marble

GammaStone NATURAL AIR Carrara White Marble

1445 Turtle Creek Blvd, Dallas, TX 75207, USA 32° 47.759'N - 96° 49.3014'W



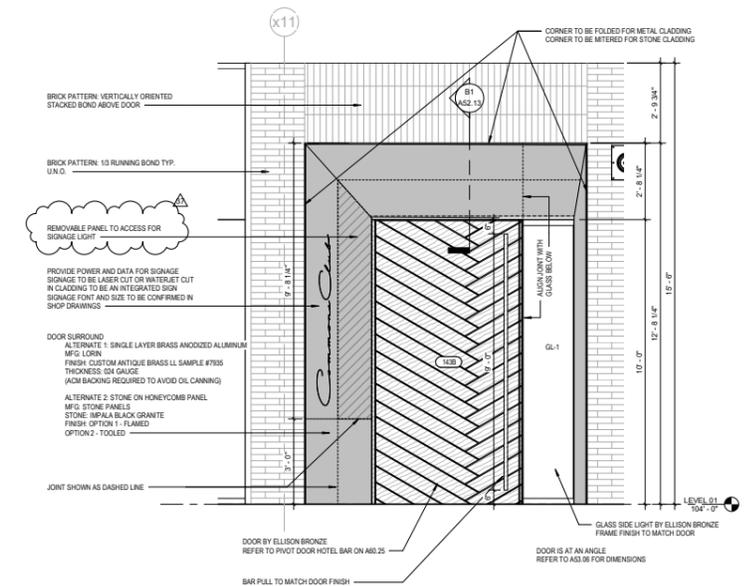
## VIRGIN HOTEL, DALLAS

Proficiently creates the entrance

Once again, GammaStone leaves its mark and proficiently creates the entrance of the well-known “Commons Club” restaurant located in the Virgin Hotel, Chicago. The “First Choice” Carrara White Marble chosen by the client enhances the entrance and gives a touch of elegance to a place frequented by many VIP customers.

The design was chosen focusing on GammaStone Natural AIR cladding. The panels converge in the direction of the entrance which have an inviting concept. The panels are three inclined surfaces which come together in a single calculated point with peculiar asymmetric cuts and rounded edges.

Although the panels have altered geometries but the structure is coplanar and homogeneous. A careful architectural study enhances the veins of the stone, which follow a precise composition. In the cutting of the pieces a gap of 6mm is considered, in order to give an overall continuity in the whole assembly.



### NATURAL AIR



# GUCCI STORE, PALM DESERT, CA

Luxury exteriors with a timeless charm

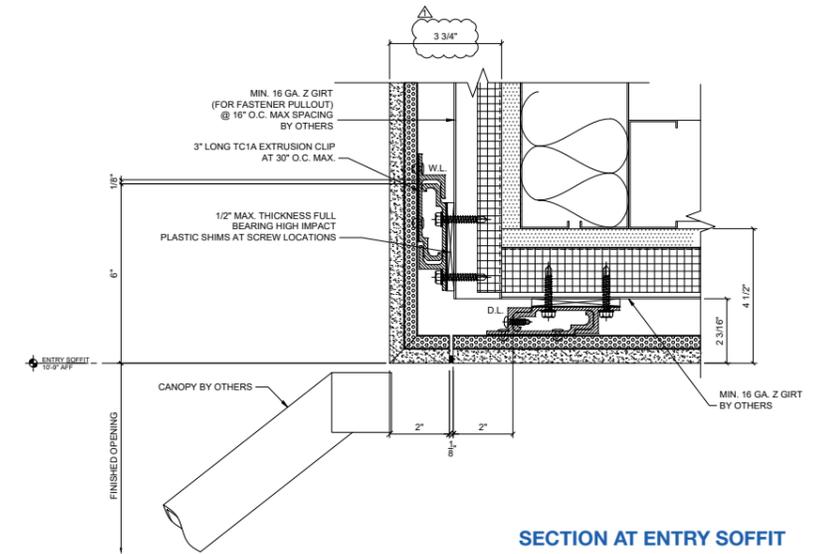
Given its vast and varied range of collections inspired by elegance of natural marble, GammaStone® solutions were chosen for the exterior of the new luxury Gucci Store in Palm Desert, California. The timeless beauty of Calacatta Gold marble with its elegant veins promoted with GammaStone®'s performance, durability, lightness, remodels the exterior and creates a sophisticated environment.

GammaStone NATURAL AIR  
Calacatta Gold

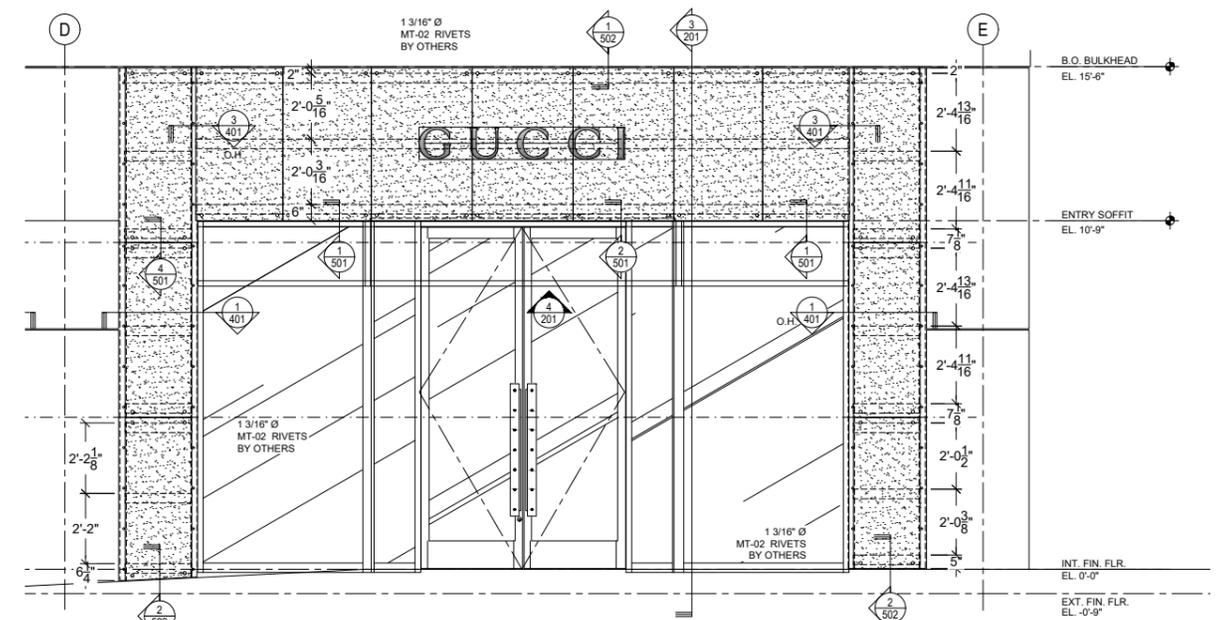


GammaStone  
NATURAL AIR  
Calacatta Gold

Gucci Store  
73-585 El Paseo Suite #1112  
Palm Desert, California,  
92260, United States  
31°47'34.3320" N  
106°27'11.0844" W



Gucci, the Italian fashion house and one of the leading brands in the world with more than 300 stores worldwide has chosen GammaStone Natural AIR for their new location in California.



STOREFRONT ELEVATION

### GLASS AIR



GammaStone GLASS AIR  
Red Traffic



GammaStone  
GLASS AIR  
Red Traffic

## CEPSA SERVICE STATION

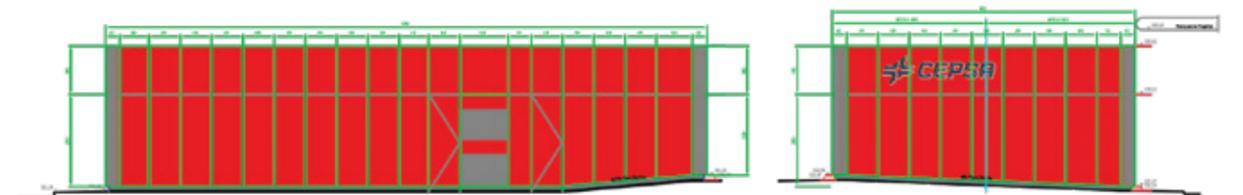
Large ultralight panels tempered glass on the surface

Cepsa Service Station - Spain  
28°19'N 16°34'W

CESPA opens its first service station in Tenerife showing up with the elegant choice of GammaStone Glass AIR solution. The use of large ultralight panels (tempered glass on the surface) with red "traffic-light" color give an innovative appearance and match perfectly with the environmentally friendly approach of this modern station project. This is the first service station to have a smart building implementing a brand new construction model. Remarkably, this building incorporates the most advanced technologies in terms of energy saving. Among these, the GammaStone Glass AIR ventilated façade stands out, composed by a tempered glass that causes a significant reduction of heat dispersion. Even if the majority of the panels are simple rectangular shapes, this project is strongly characterized by the realization of curved glass corners (with a radius of curvature of 450 mm). Moreover, the choice of using the same material for the cladding of the access doors, made them blend completely into the façade, enhancing the material continuity between the various surfaces. The result is a visual effect of absolute essentiality and linearity.



**A technically excellent result!** GammaStone has overcome another important challenge, taking advantage of all its technical expertise and its unparalleled professionalism to satisfy designers' demands and clients' needs. GammaStone faced this project obtaining an impeccable result, beyond any expectation.



### GLASS AIR

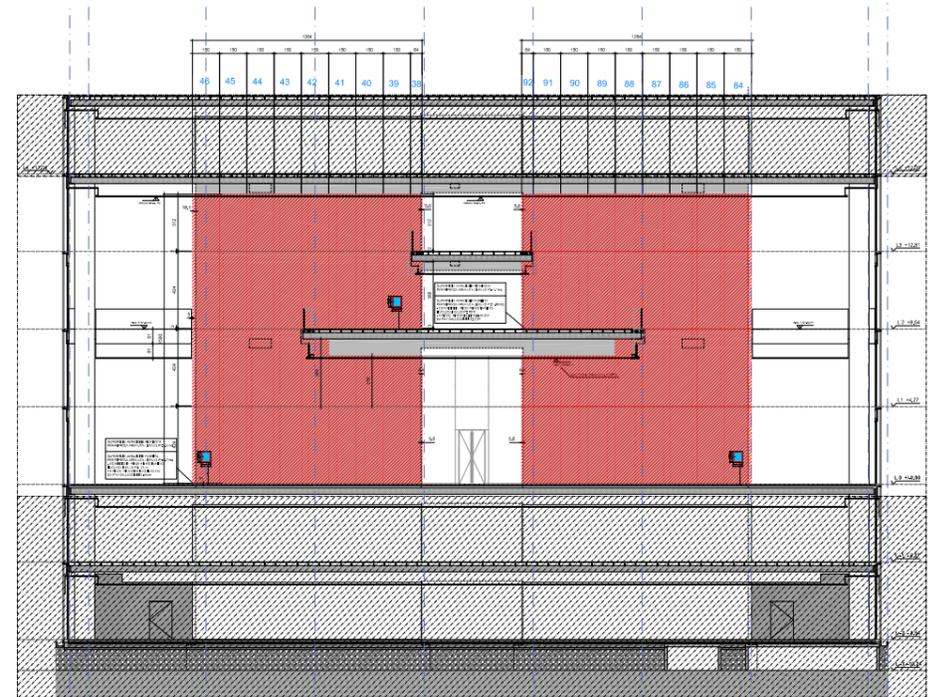


GammaStone GLASS AIR  
Optic White

GammaStone  
GLASS AIR  
Optic White

ARCHITECTURAL DESIGN:  
**Studio Fuksas**

Piemonte Region Headquarters  
Turin - Italy (Fuksas Project)  
45°04'N 7°42'E



**A-A Prospect**  
WEST Elevation P1-P3



## PIEMONTE REGION HEADQUARTERS

Large ultralight tempered glass panels

The choice of materials is a crucial step of the creative process among top designers. The building material enables the optimal shaping of the spaces, both internal and external. Furthermore, the material interacts with the surrounding environment and crucially determines the functionality of the environment. Using GAMMASTONE Glass AIR panels in lacquered glass in white a prime example of how a designer can obtain a clean and rational effect suited to an environment that is for both institutional and business. In Torre Regione Piemonte we installed large reflective glass panels for the internal cladding of large common areas, obtaining a striking result in terms of brightness and aesthetic appeal.

**GLASS AIR**



**GammaStone GLASS AIR**  
**Ice**



**UNICREDIT BANK**  
**Lobby lacquered glass panels**

**GammaStone**  
**GLASS AIR**  
**Ice**

Unicredit (Tower A), Milan - Italy  
45°27'50.98"N 9°11'25.21"E

The choice of glass for the interiors of professional environments is definitely a relevant trend. This solution facilitates the cleaning of the surfaces and conveys a sense of modernity and brightness to users and workers. In this project the GAMMASTONE Glass AIR panels in lacquered glass (ice colored) clad the lobby of the prestigious Milanese Bank. Note that the huge size of the panels, which is one of the points of strength from the aesthetic point of view, does not imply difficulties in the installation or waste of space. The reduced anchoring structure, in this case, creates a gap of only 5 cm, which can be used for the allocation of power and communication lines.

**GLASS AIR**



**GammaStone GLASS AIR**  
**Blue Distant**



**LOCAL PALEONTOLOGICAL**  
**MUSEUM OF ASTI**  
**High quality monolithic glass**

**GammaStone**  
**GLASS AIR**  
**Blue Distant**

Museo Paleontologico  
Territoriale dell'Astigiano,  
Asti - Italy  
45°27'50.98"N 9°11'25.21"E

Back-lacquered Gammastone Glass panels (shiny finish), decorate another exhibition space showing light and elegance also thanks to the creation of monolithic glass angles of high aesthetic quality. The remarkable finish of the corners enhances the delicacy and the luminosity of glass while ceramic monolithic corners confer to the other spaces order and elegance.



### GLASS AIR



GammaStone GLASS AIR  
Bicolor



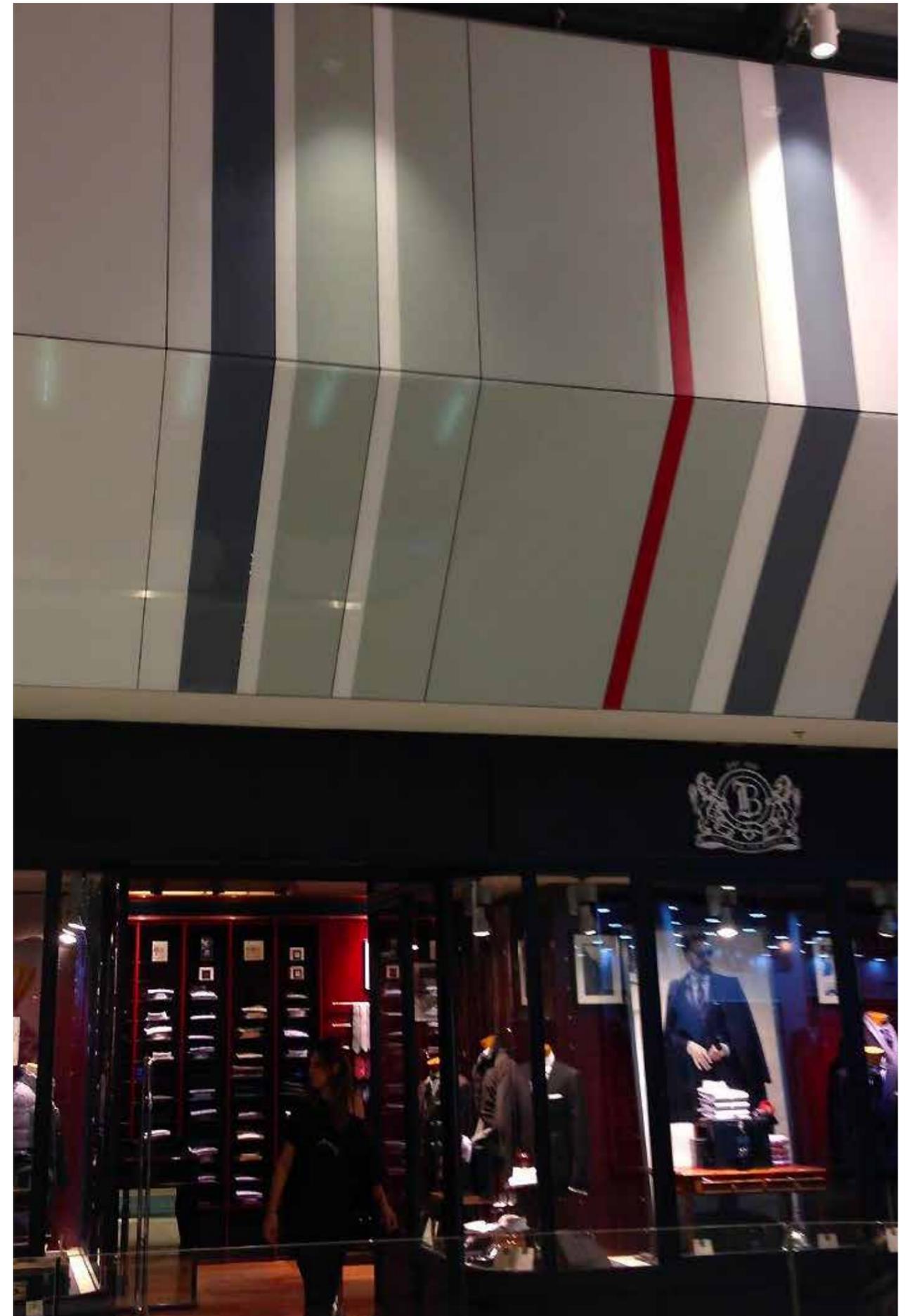
## SHOPPING MALL

Bicolor panels in lacquered glass

GammaStone  
GLASS AIR  
Red, Extra White, Ice

Shopping Mall, Milan - Italy  
45°27'50.98"N 9°11'25.21"E

Glass Bicolor is given by the coupling of glasses with different colors applied on GammaStone AIR panel. Its uniqueness is given by the infinite possibilities to realize large panels, having glass finishing of two colors; avoiding in this way the presence of double panels, saving on the quantity of formats and on substructure to design.



«You can't think of architecture without thinking about people.»

(Richard Rogers)



**archiproducts**  
DESIGN AWARDS  
—  
WINNER 2018

**GRES AIR**

FINISHES  
full size

Geo Coffe

# Sizes panels

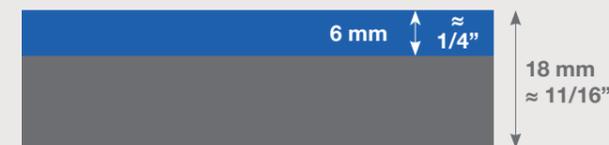
\_GRES AIR

GammaStone AIR solution in porcelain gres is available in large-format sizes utilizing the new slim manufacturing techniques. It 'a high technology product which allows mechanical installation of 3/6 mm thick ceramic slabs and the realisation of architectural monolithic elements. Available sizes up to 3200x1500 mm and all sub-sizes obtained by cutting the standard ones.

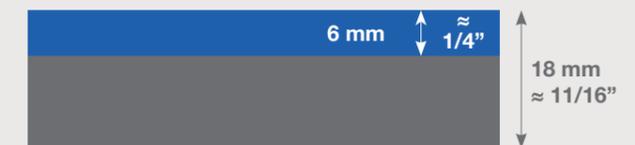


	Max panel sizes	Total panel thickness	Ceramic thickness	Panel weight
Section A	3200x1600 mm (5,120 m <sup>2</sup> )	18 mm	6 mm	21 kg/m <sup>2</sup>
	126"x 63" (55,11 ft <sup>2</sup> )	≈ 11/16"	≈ 1/4"	4.3 lb/sqft
Section B	3075x1540 mm (4,735 m <sup>2</sup> )	18 mm	6 mm	21 kg/m <sup>2</sup>
	121,06"x 60,63" (50,97 ft <sup>2</sup> )	≈ 11/16"	≈ 1/4"	4.3 lb/sqft
Section C	3075x1040 mm (3,198 m <sup>2</sup> )	17 mm	5 mm	19 kg/m <sup>2</sup>
	121,06"x 40,94" (34,42 ft <sup>2</sup> )	≈ 11/16"	≈ 3/16"	3.9 lb/sqft
Section D	3075x1040 mm (3,198 m <sup>2</sup> )	15 mm	3 mm	14 kg/m <sup>2</sup>
	121,06"x 40,94" (34,42 ft <sup>2</sup> )	≈ 9/16"	≈ 1/8"	2.86 lb/sqft

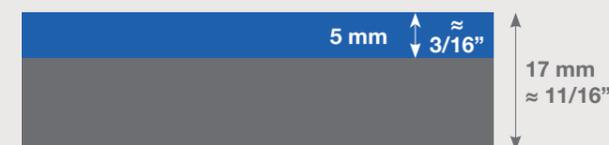
Section A



Section B



Section C



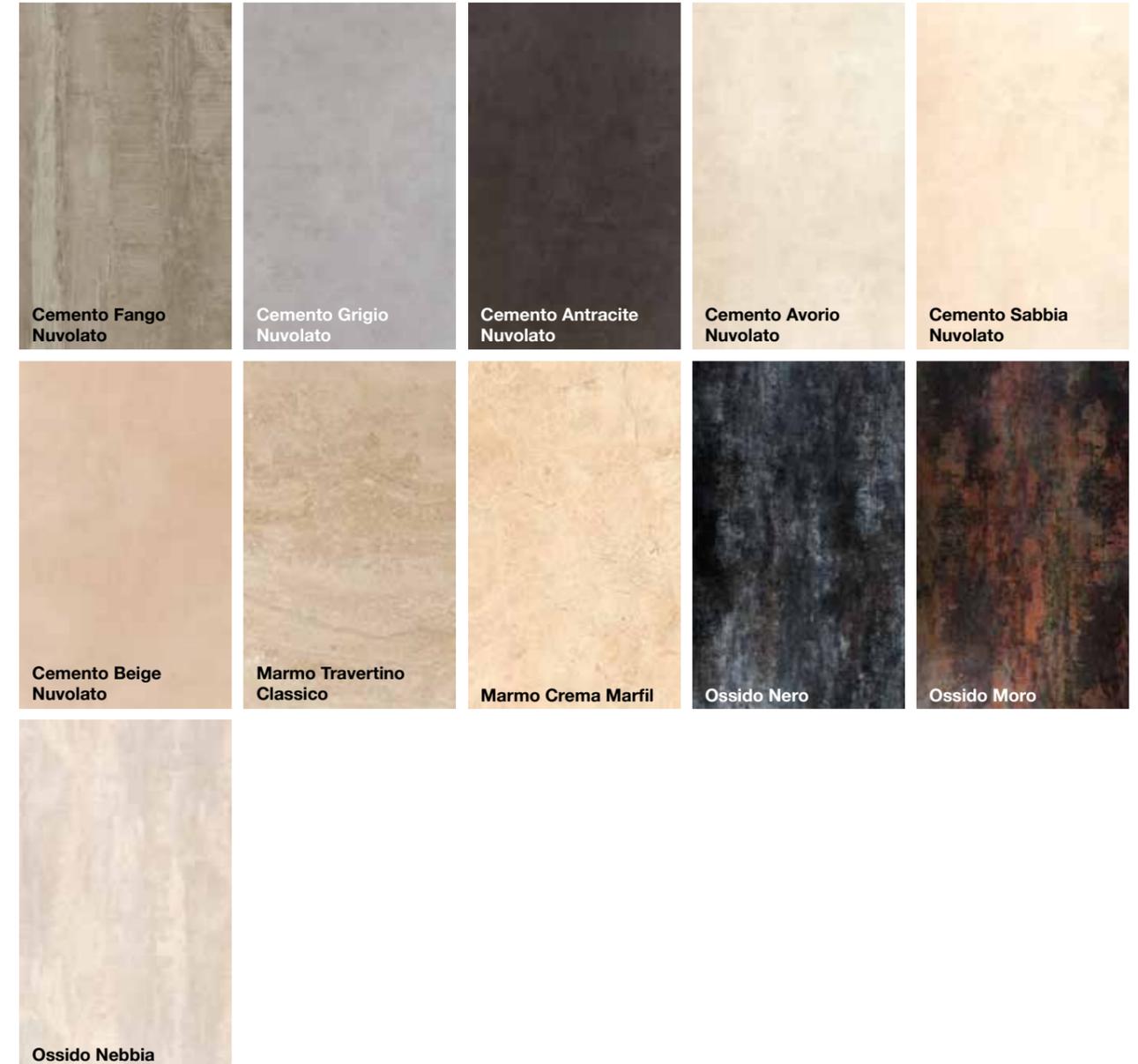
Section D



# Colors

\_GRES AIR

GRES  
COD. GR1



# Colors

\_GRES AIR

## GRES COD. GR2



## GRES COD. GR3



# Colors

\_GRES AIR

## GRES

**COD. GR3**



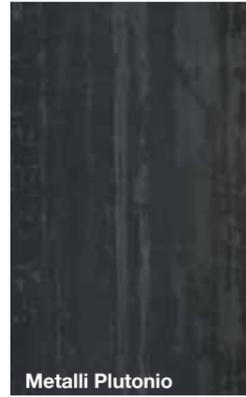
Geo Bronzo

## GRES

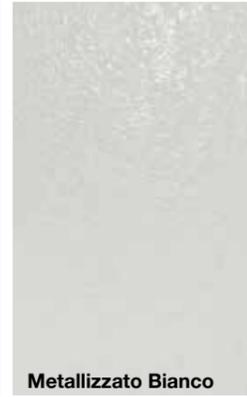
**COD. GR4**



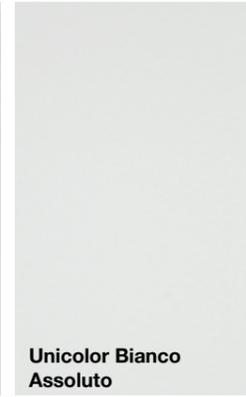
Metalli Ferro



Metalli Plutonio



Metallizzato Bianco



Unicolor Bianco Assoluto



Vein Moro



Geo Moro



Geo Tortora



Pietra Quarzo



Geo Coffe



Geo Grigio Chiaro



Pietra Lavica Nera Naturale



Pietra Limestone

## GRES

**COD. GR5**



Pietra Bianco Statuario



Pietra Onice Bianco Lucidato



Pietra Travertino Romano



Pietra Onice Blu Lucidato

## GRES

**COD. GR6**



Pietra Roccia Bianca



Pietra Roccia Grigia

## GRES

**COD. GR7**



Pietra Eramosa Lucidato



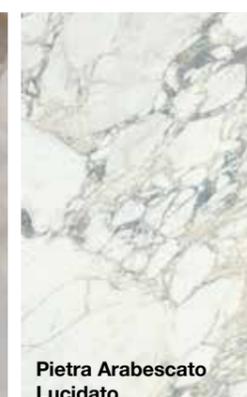
Pietra Thassos Lucidato

## GRES

**COD. GR8**



Pietra Madreperla Marrone



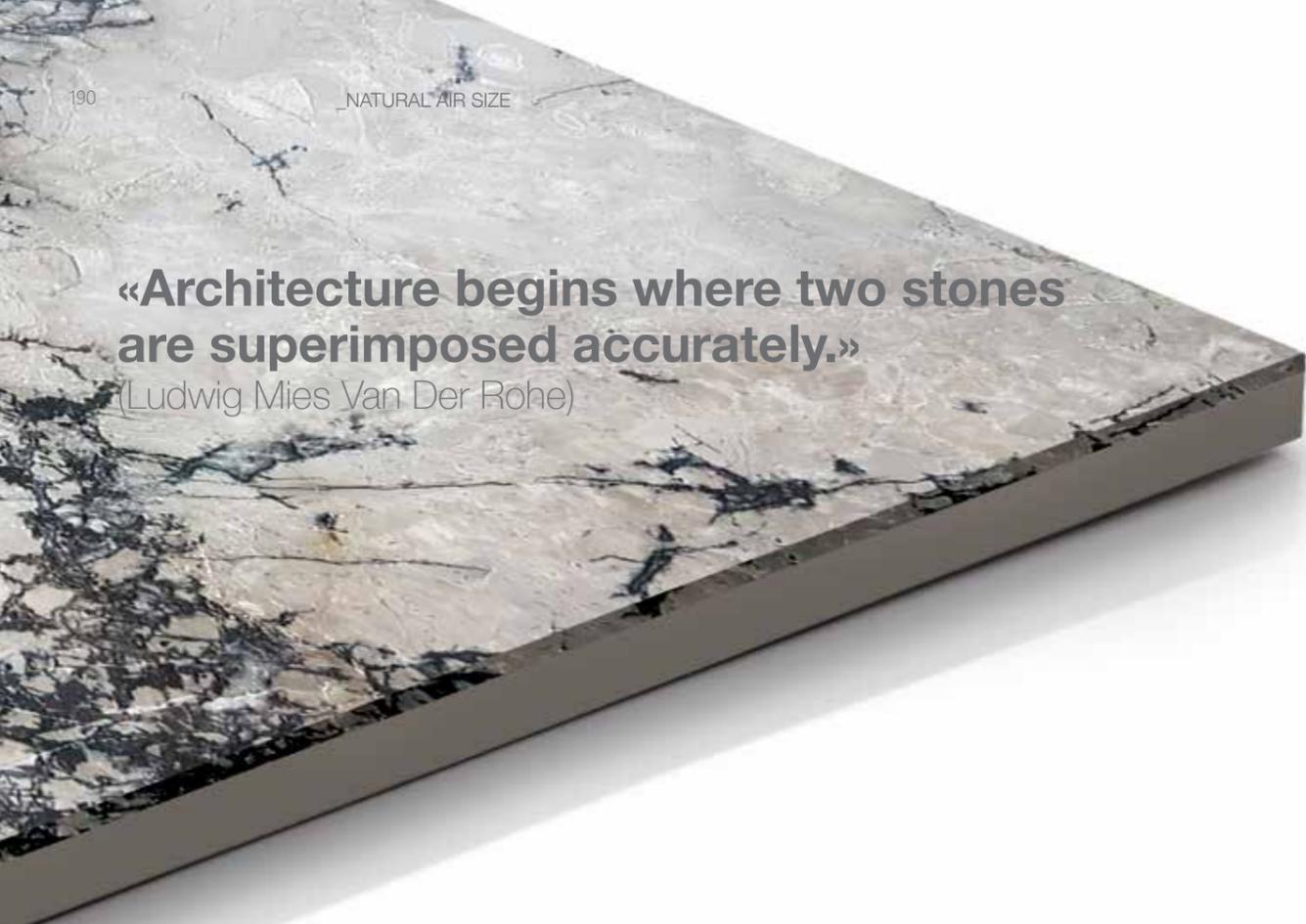
Pietra Arabescato Lucidato



Pietra Madreperla

«Architecture begins where two stones are superimposed accurately.»

(Ludwig Mies Van Der Rohe)



NATURAL AIR

FINISHES  
full size



Noble Grey

## Sizes panels

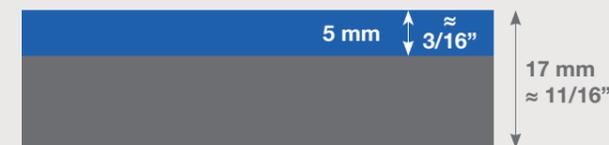
\_NATURAL AIR

GammaStone AIR solution in natural stone allows the mechanical installation of large panel sizes formed with marble, granite, limestone or travertine. It can be used to make beams, columns and any other architectural element with a monolithic result, creating the effect of one piece. The available sizes depend on the block size, the maximum size is 3200x1500 mm.

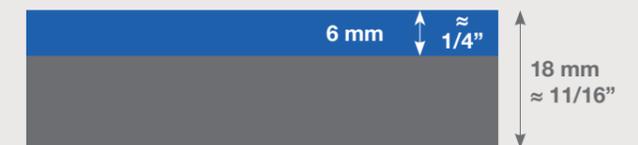


	Max panel sizes	Total panel thickness	Stone thickness	Panel weight
Section A	3200x1500 mm (4,800 m <sup>2</sup> )	17 mm	5 mm	18 kg/m <sup>2</sup>
	126"x 59" (52,42 ft <sup>2</sup> )	≈ 11/16"	≈ 3/16"	3.7 lb/sqft
Section B	3200x1500 mm (4,800 m <sup>2</sup> )	18 mm	6 mm	25 kg/m <sup>2</sup>
	126"x 59" (52,42 ft <sup>2</sup> )	≈ 11/16"	≈ 1/4"	5.5 lb/sqft
Section C	3200x1500 mm (4,800 m <sup>2</sup> )	24 mm	12 mm	36 kg/m <sup>2</sup>
	126"x 59" (52,42 ft <sup>2</sup> )	≈ 15/16"	≈ 1/2"	7.4 lb/sqft

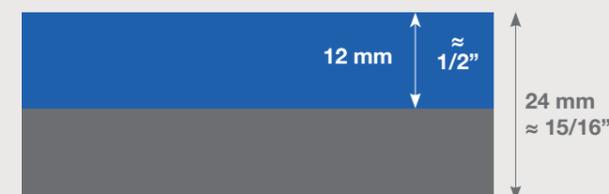
Section A



Section B



Section C



# Materials

\_NATURAL AIR

## GRANITE

COD. NF1



Rosa Porrino

## GRANITE

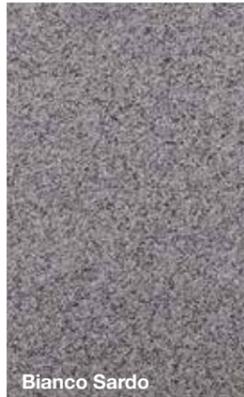
COD. NF2



Rosa Beta



Silver Star



Bianco Sardo



Verde Veneziano



Bianco Dalmata



Amendoa



Bianco Mino

## GRANITE

COD. NF3



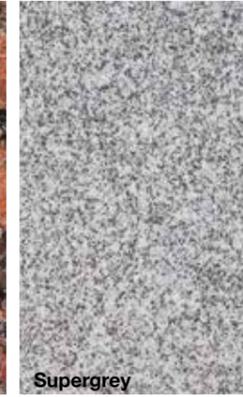
New Caledonia



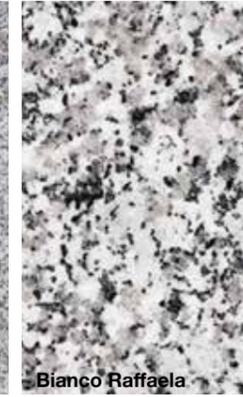
Peppermint



Dallas Pink



Supergrey



Bianco Raffaella



Golden Coast



Viscont White



Viscont White



Giallo Paolista



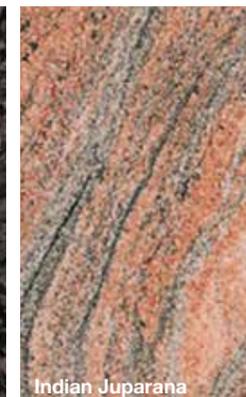
Giallo Sf Real Mm



Tan Brown



Steel Grey



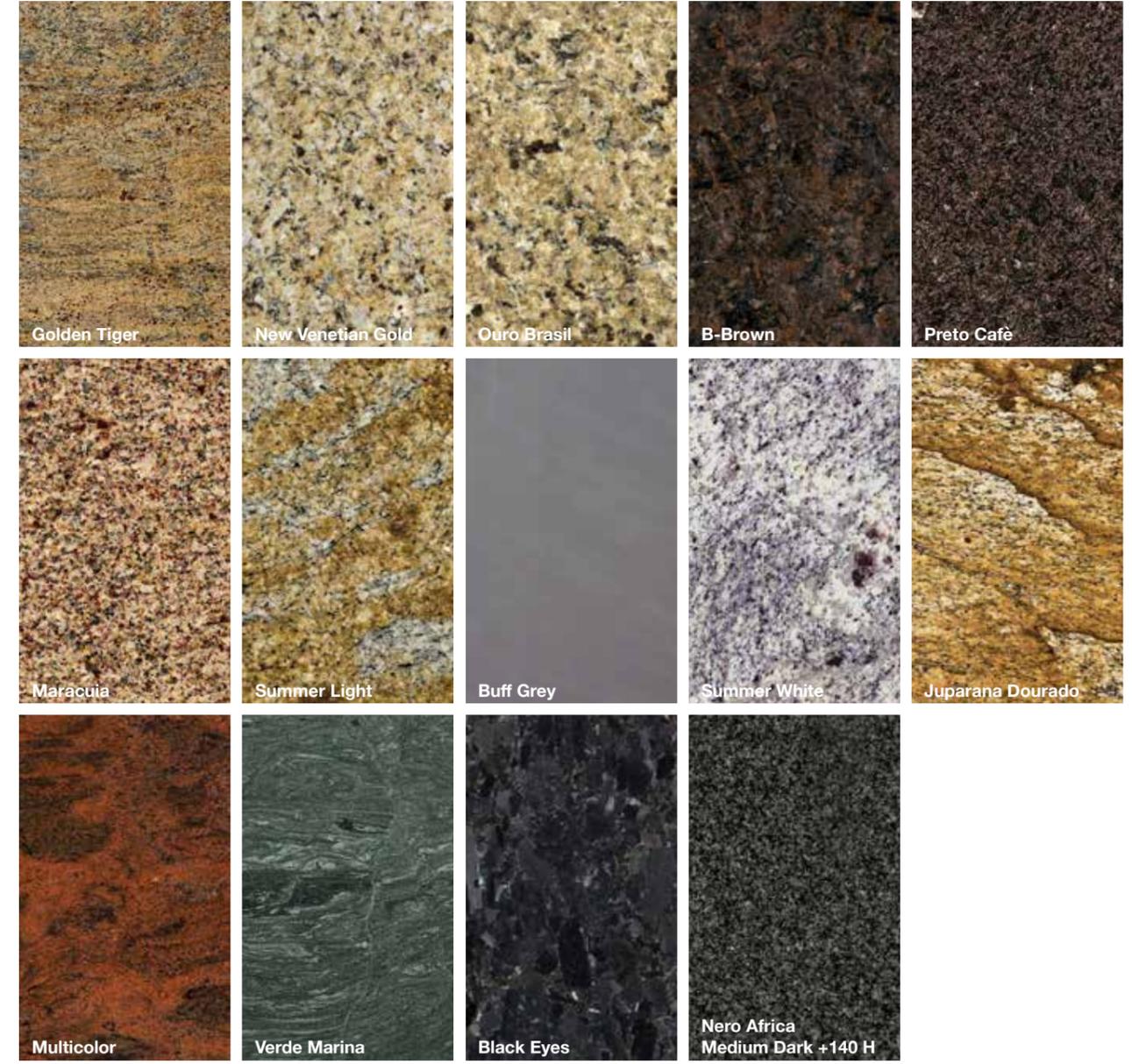
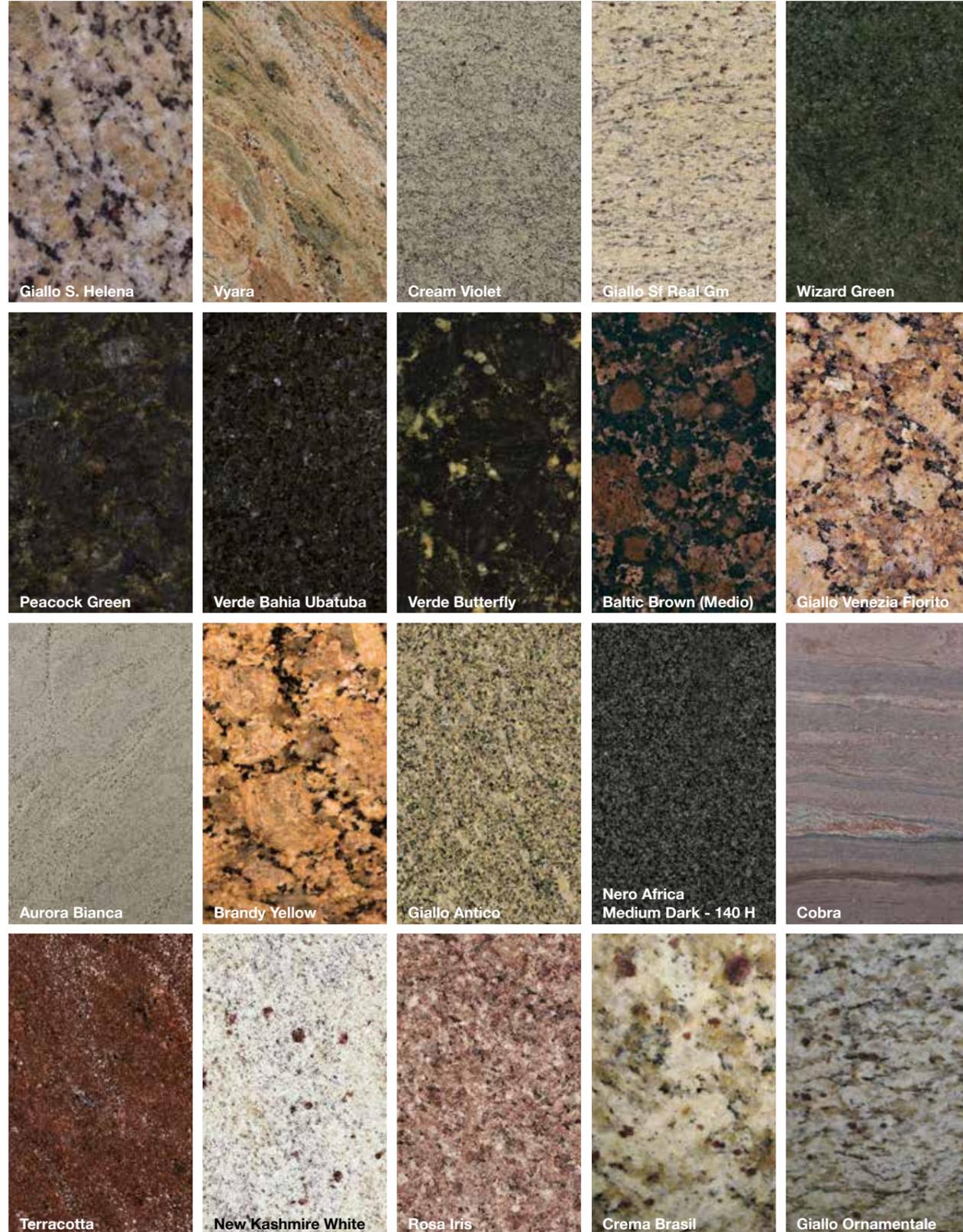
Indian Juparana

# Materials

\_NATURAL AIR

## GRANITE

COD. NF4



# Materials

\_NATURAL AIR

## GRANITE

COD. NF5

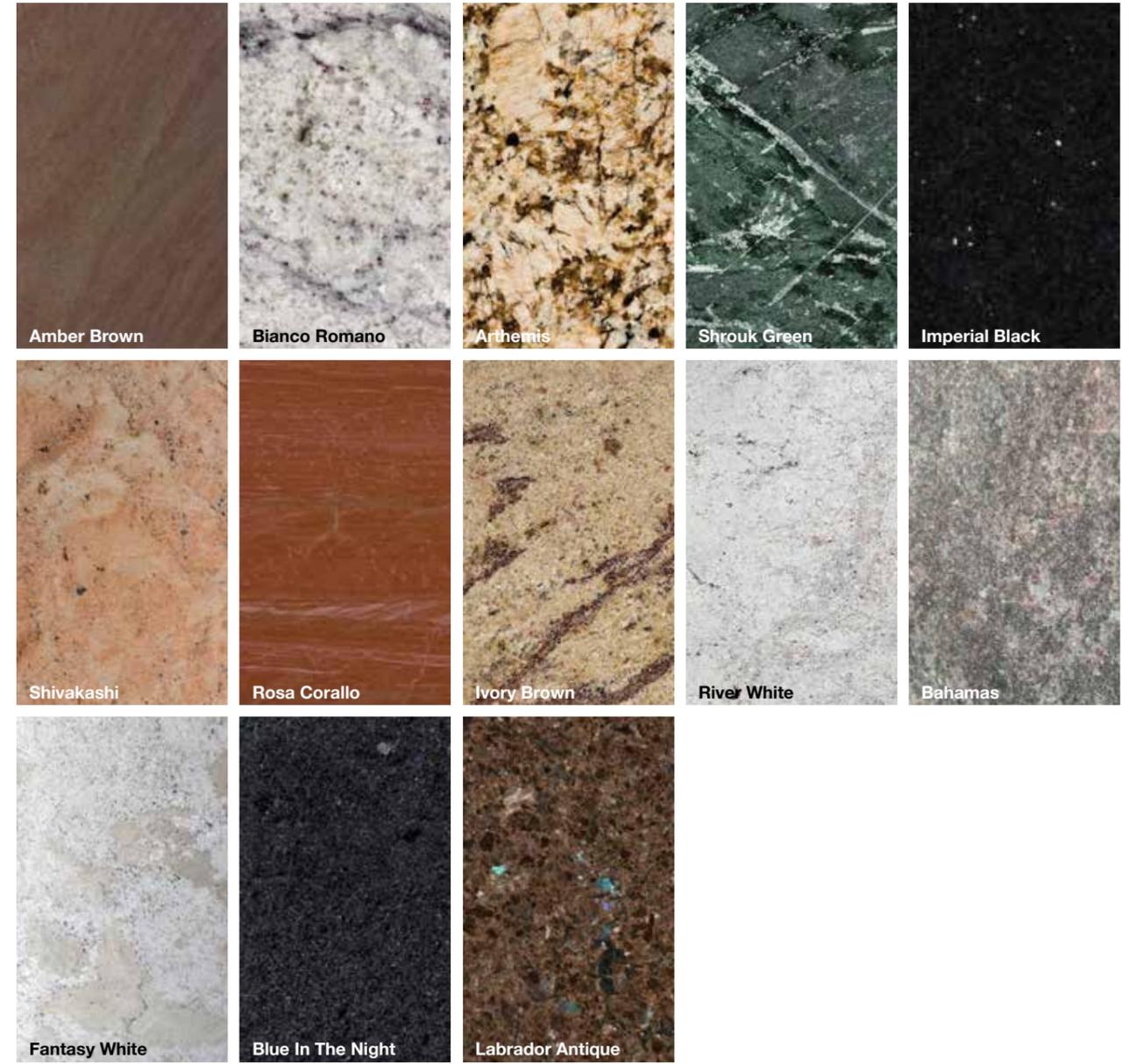
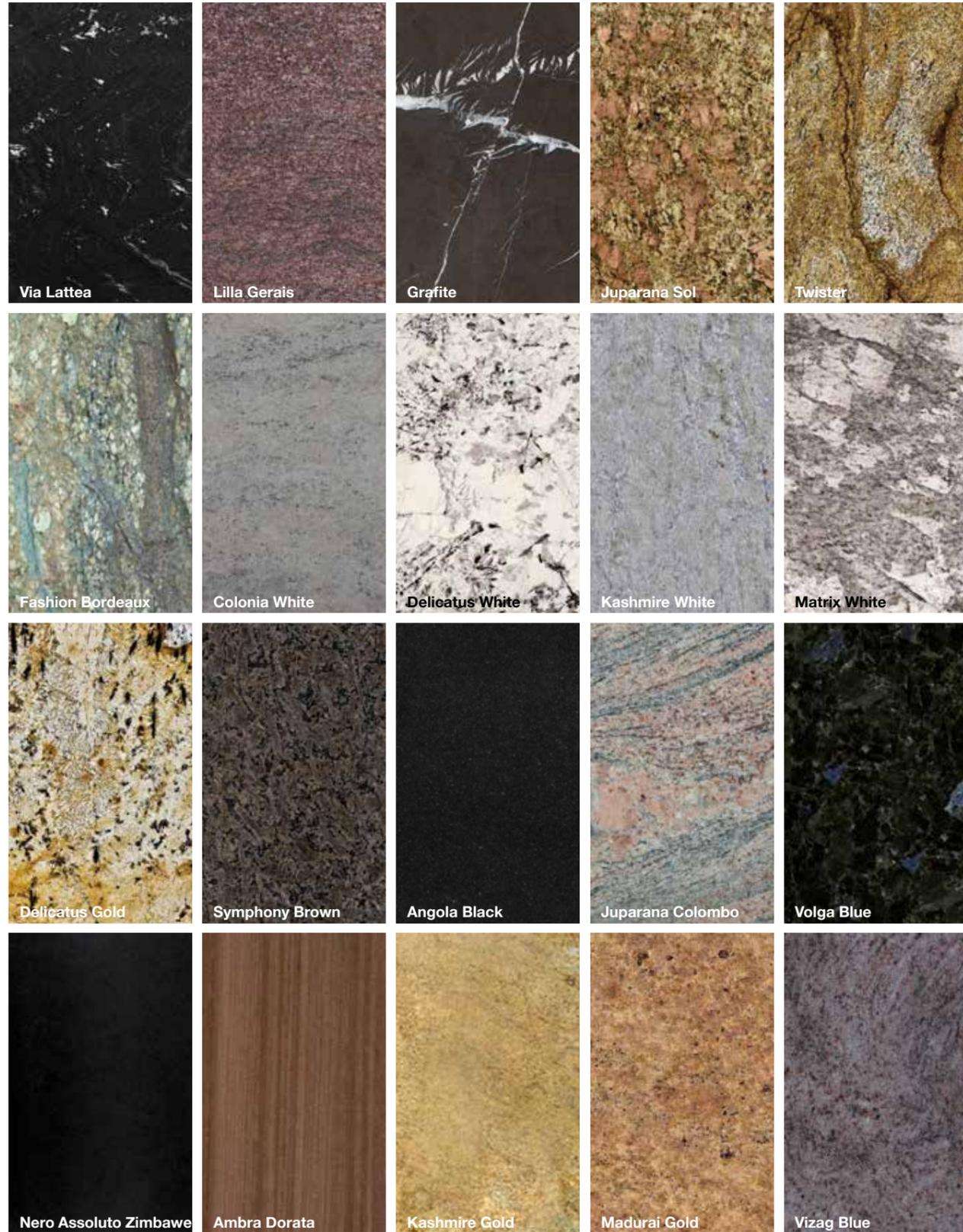


# Materials

\_NATURAL AIR

## GRANITE

COD. NF6

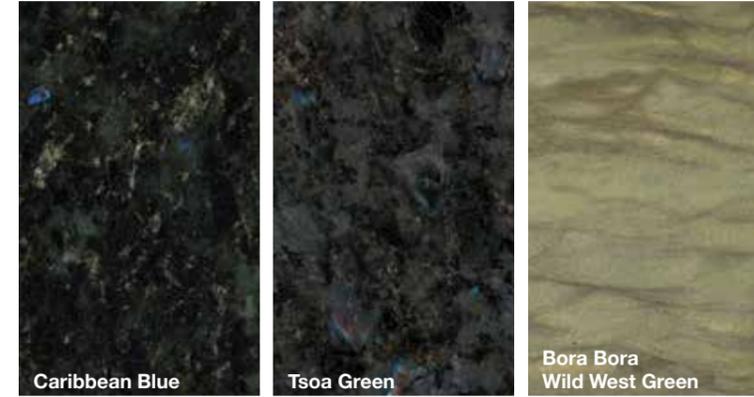
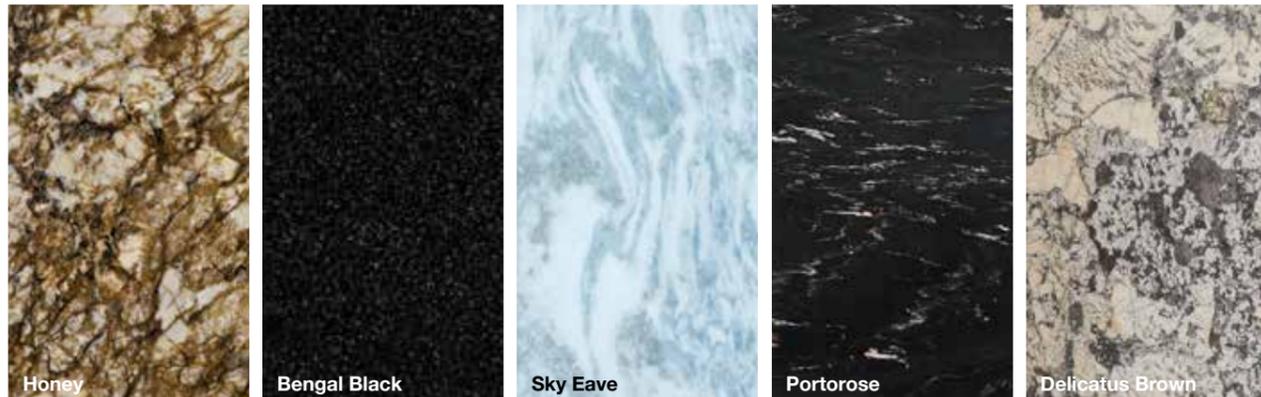
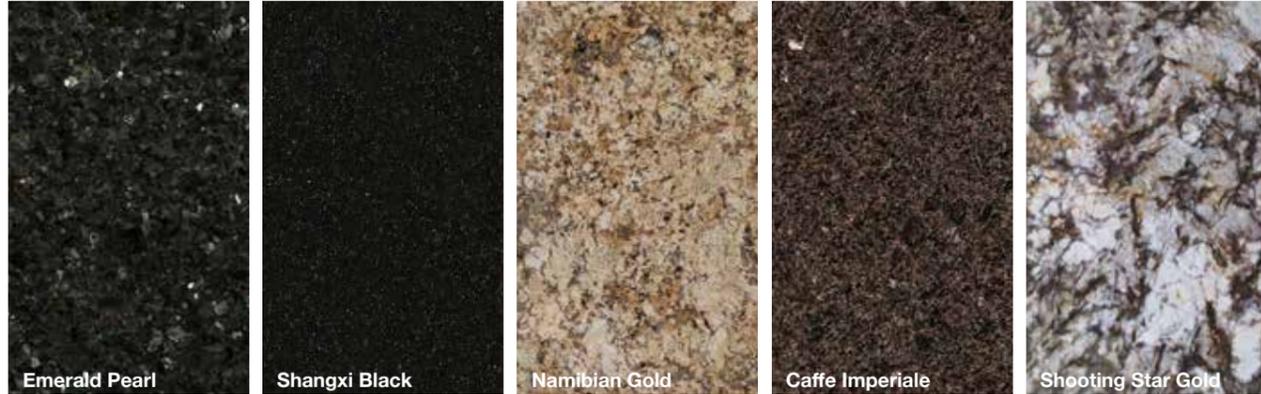
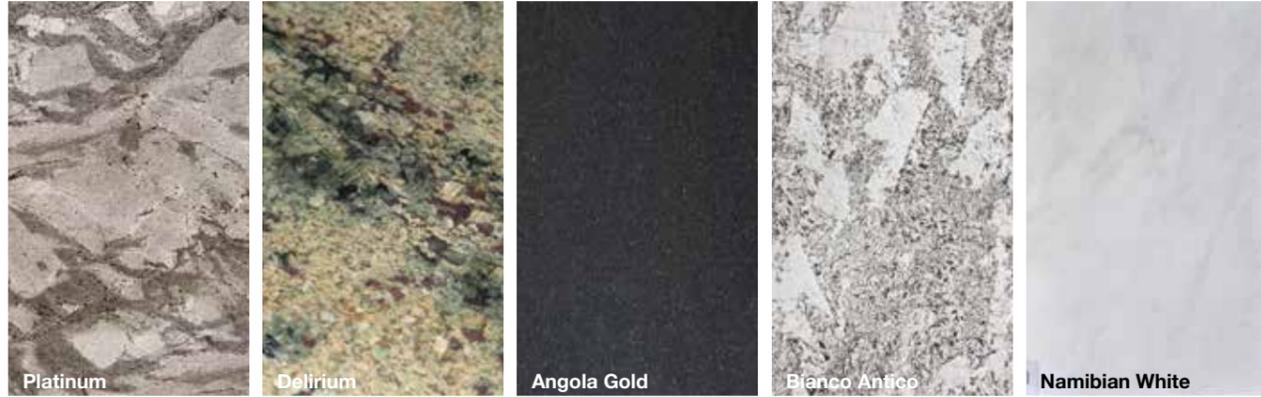


# Materials

\_NATURAL AIR

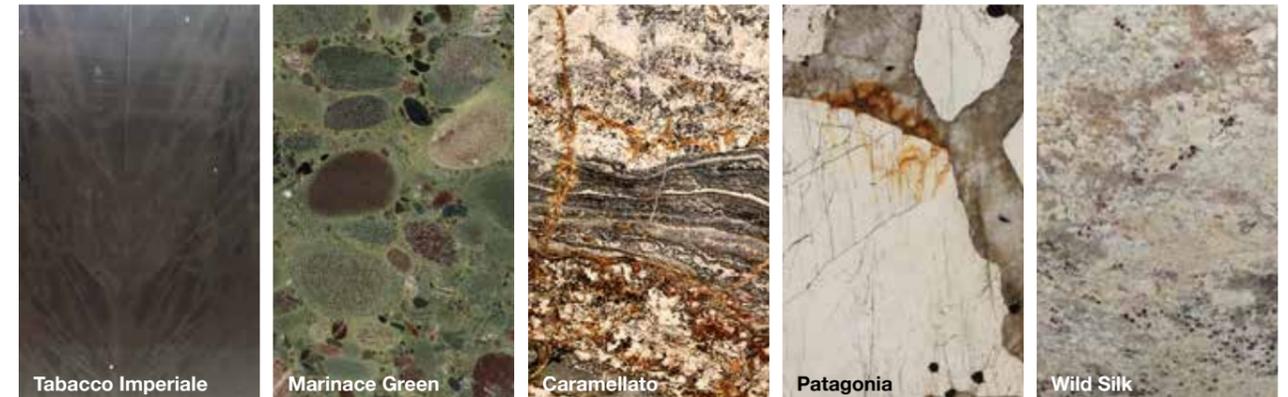
## GRANITE

COD. NF7



## GRANITE

COD. NF8

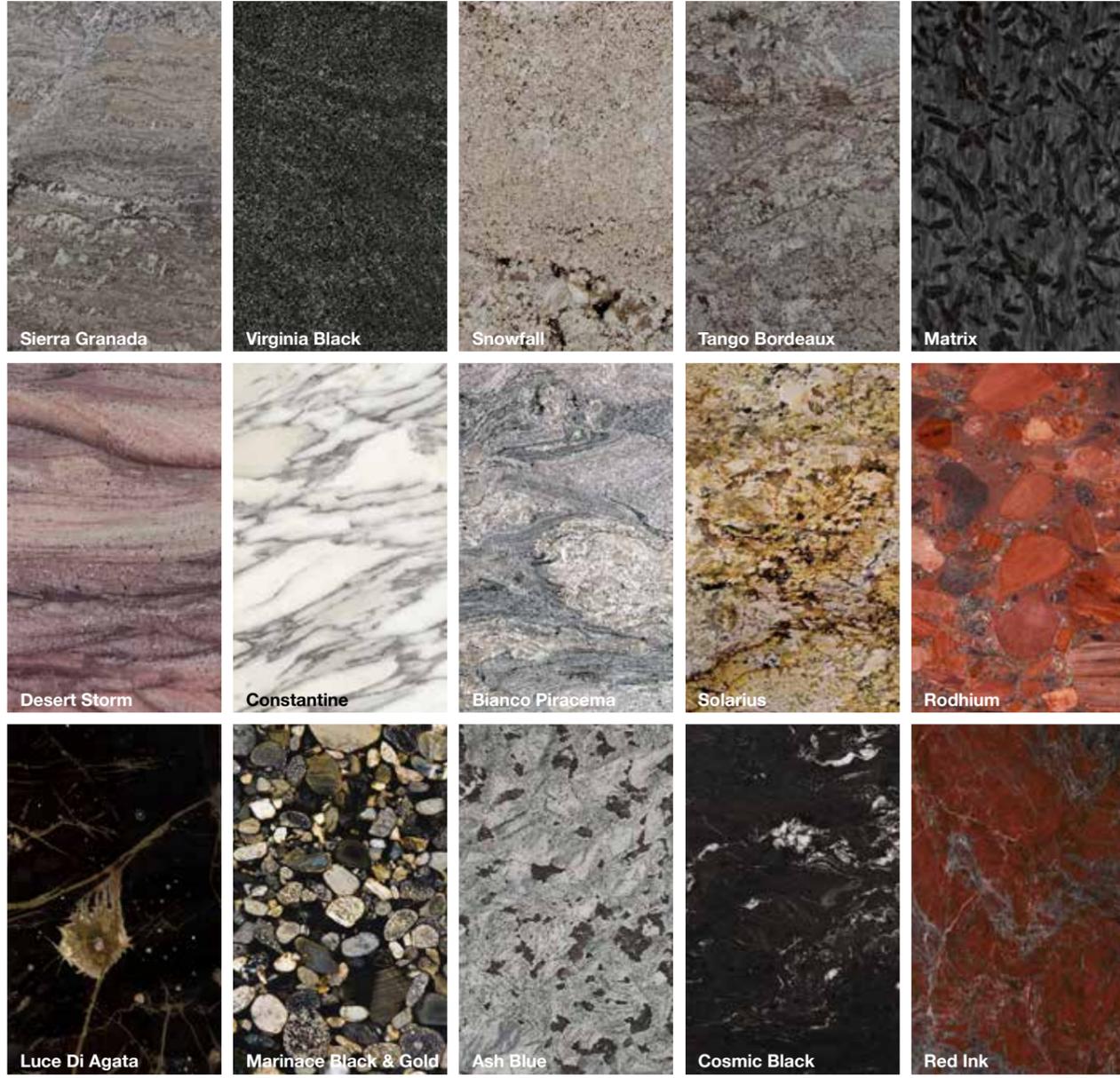


# Materials

\_NATURAL AIR

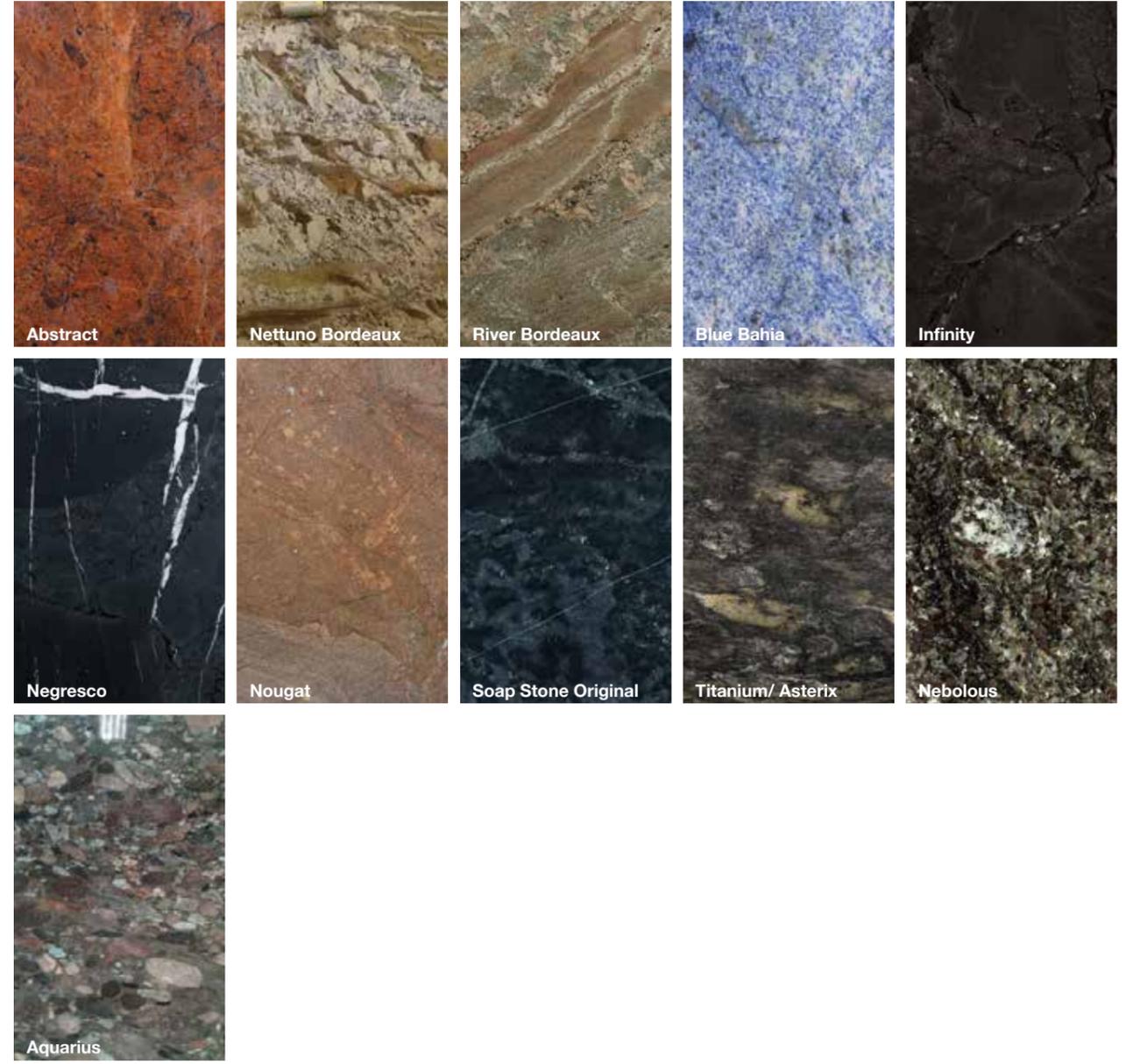
## GRANITE

COD. NF8



## GRANITE

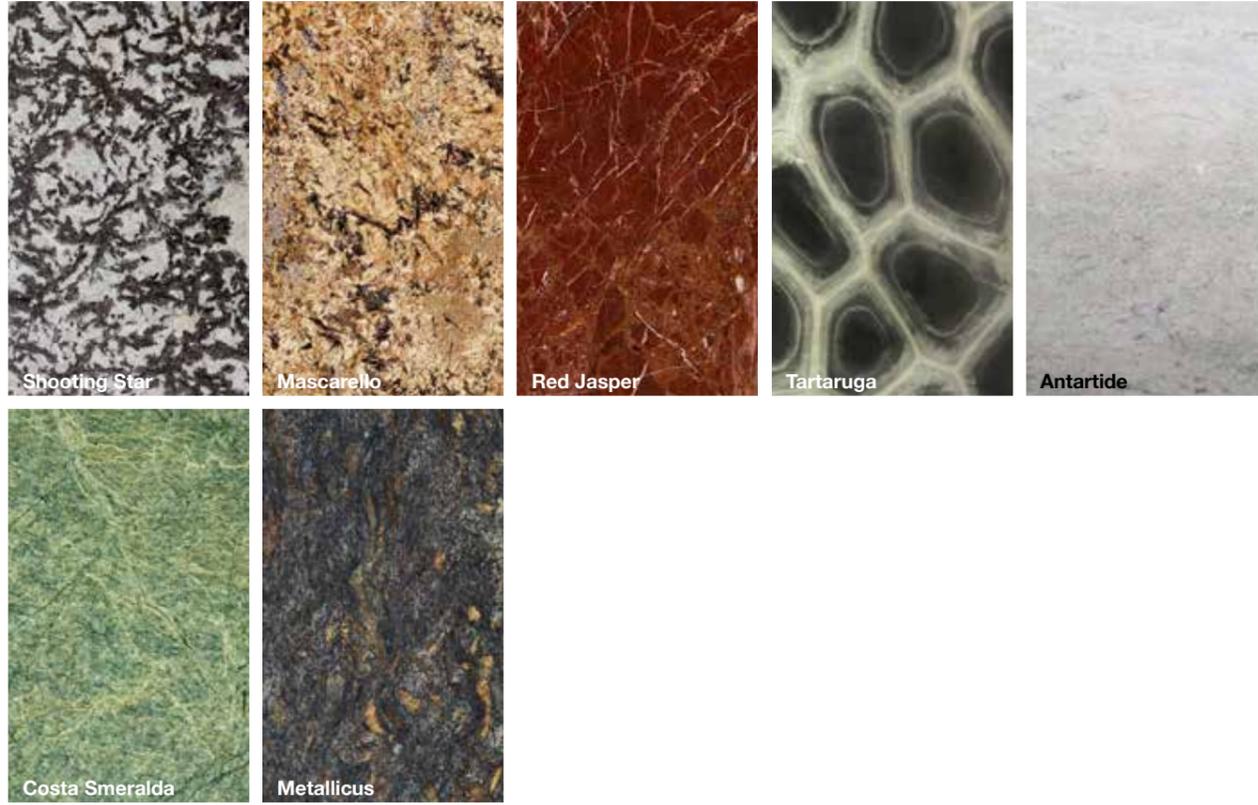
COD. NF9



# Materials

\_NATURAL AIR

## GRANITE COD. NF10



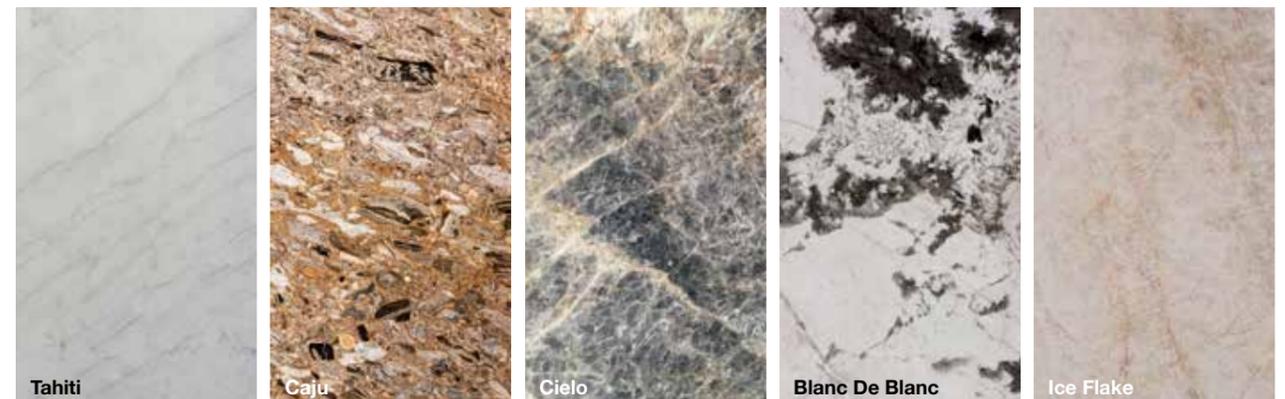
## GRANITE COD. NF12



## GRANITE COD. NF11



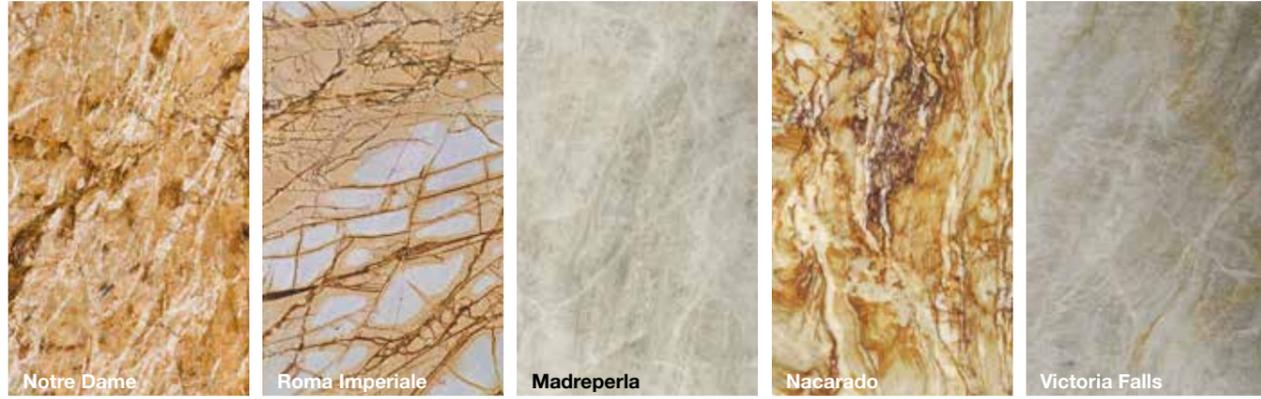
## GRANITE COD. NF13



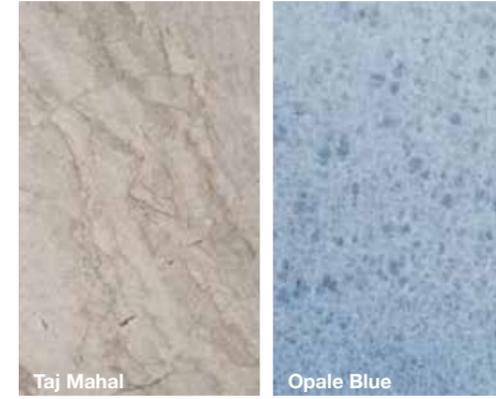
# Materials

\_NATURAL AIR

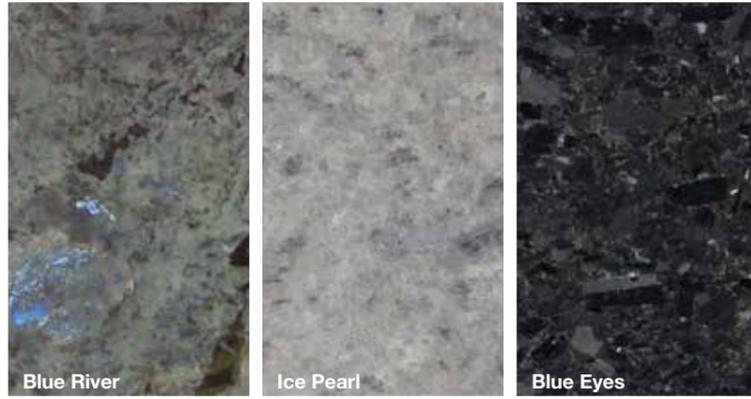
## GRANITE COD. NF13



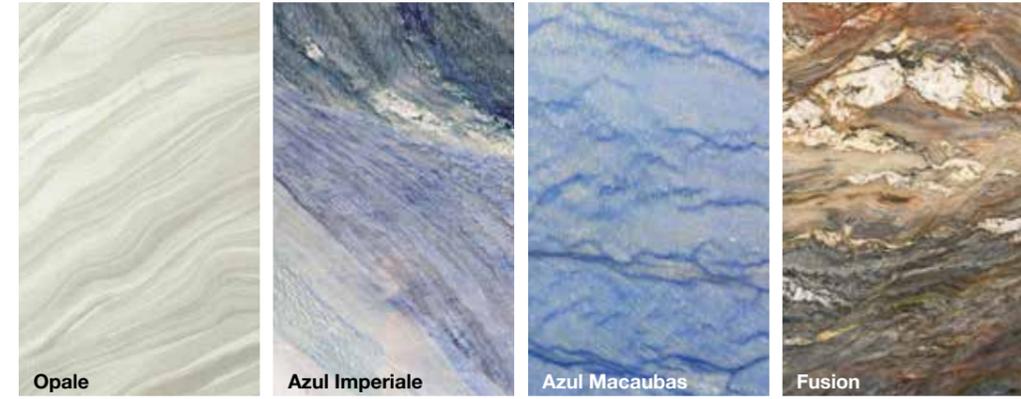
## GRANITE COD. NF16



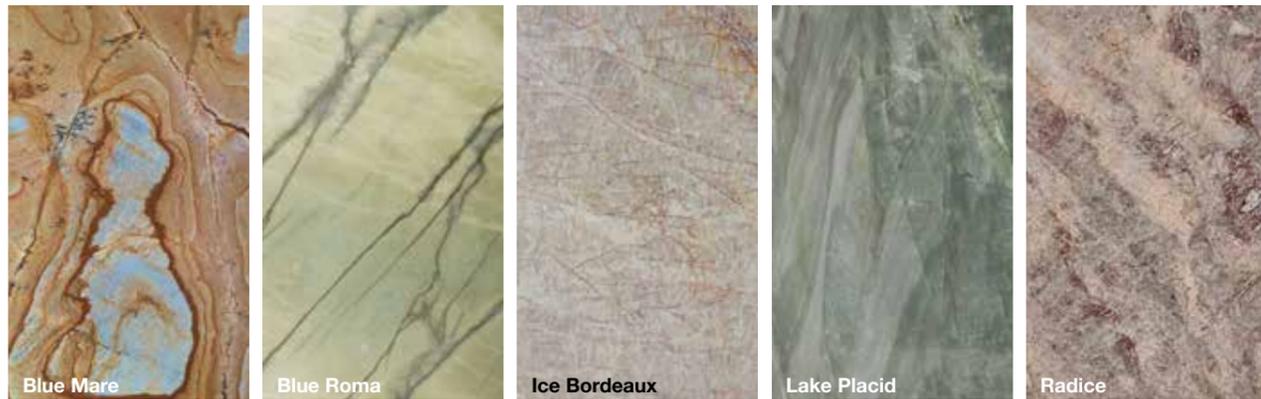
## GRANITE COD. NF14



## GRANITE COD. NF17



## GRANITE COD. NF15



## GRANITE COD. NF18



# Materials

\_NATURAL AIR

## GRANITE

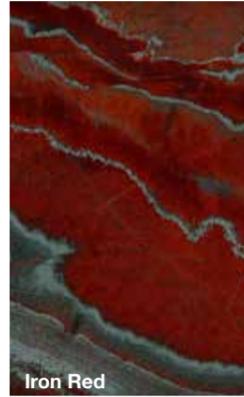
COD. NF19



Cristallo Gold



Iceberg



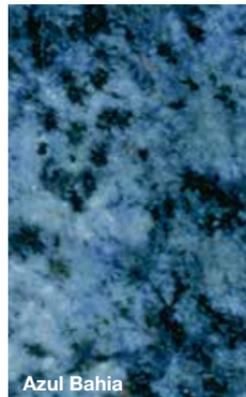
Iron Red



Visone

## GRANITE

COD. NF20



Azul Bahia

## GRANITE

COD. NF21



Amazzonite

## MARBLE

COD. NF1



Giallo Atlantide



Giallo Cleopatra



Giallo Provenza

## MARBLE

COD. NF2



Galala



Rainbow



Verde Guatemala



Crema Imperiale Top



Vratza



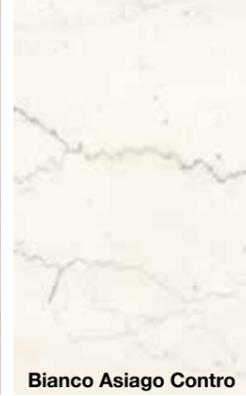
Rosa Asiago



Bianco Asiago Verso



Teak - Rainbow



Bianco Asiago Contro



Cioccolato



Breccia Sarda (Daino Reale)



Amazon Brown



Lipica Fiorito



Palissandro Blue



Perlato Europa

# Materials

\_NATURAL AIR

## MARBLE

COD. NF3



## MARBLE

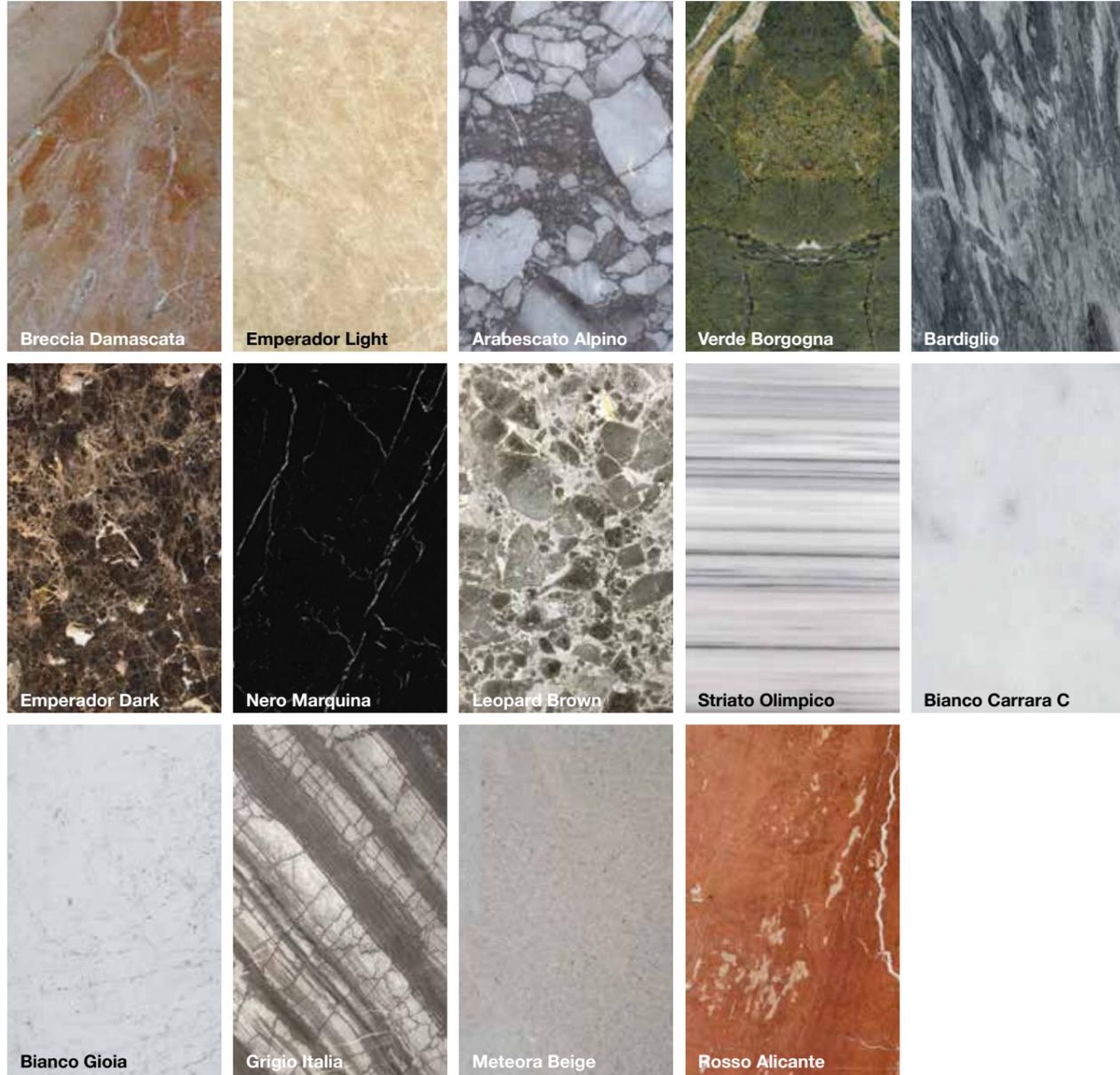
COD. NF4



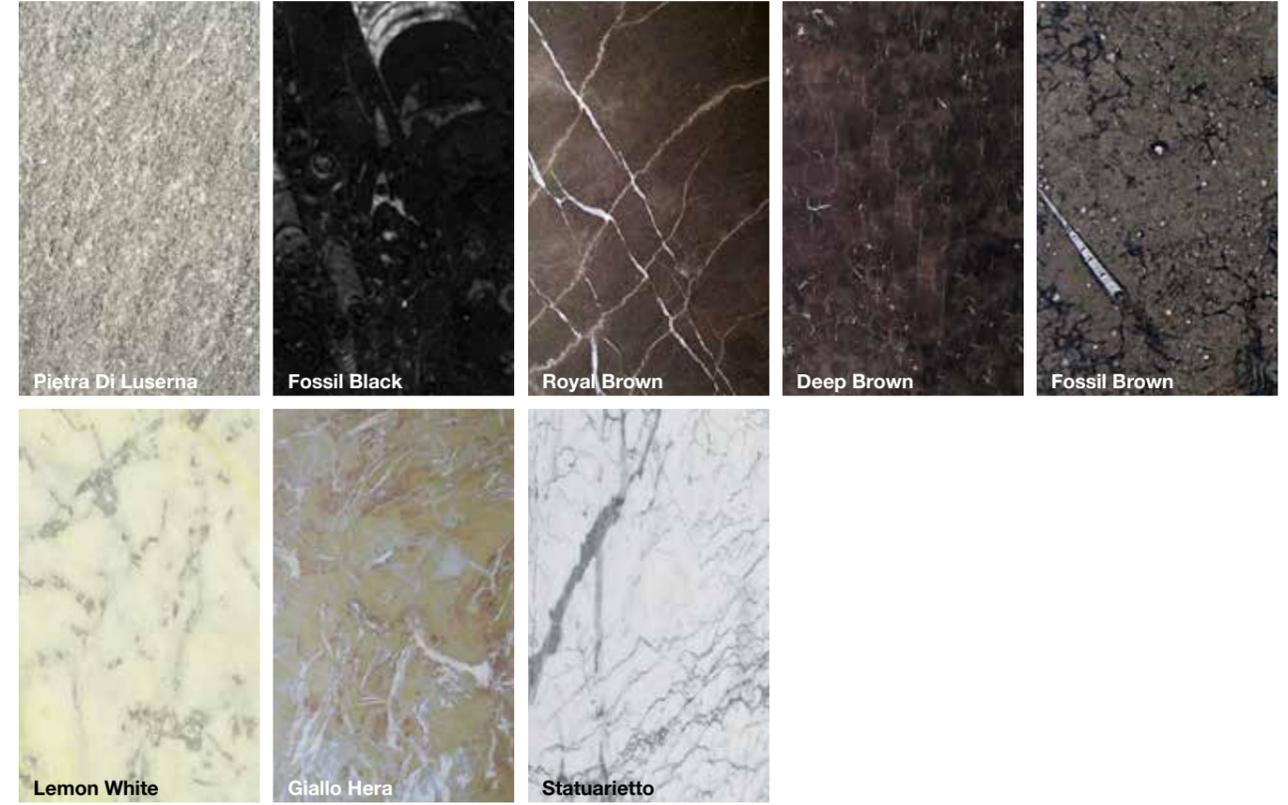
# Materials

\_NATURAL AIR

## MARBLE COD. NF5



## MARBLE COD. NF6



## MARBLE COD. NF7



# Materials

\_NATURAL AIR

## MARBLE

COD. NF7



Nero Alpino



Nero Port Laurent

## MARBLE

COD. NF8



Arabescato Orobico Rosso



Arabescato Cervaiolo



Fantasy Brown

## MARBLE

COD. NF8



Noble Grey



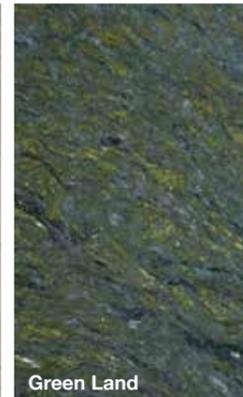
Olympos White



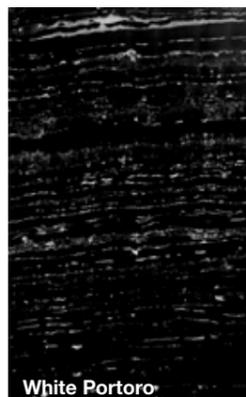
Mystic Grey Melange



Silk Georgette



Green Land



White Portoro



Arabescato Orobico Grigio



Covelano Vena Argento



Opal White



Rhino White

## MARBLE

COD. NF9



King White (-239 Cm)



Bianco Naxos



Michelangelo Black & Gold



Crema Italia



Black Wave

## MARBLE

COD. NF11



Calacatta Van Gogh

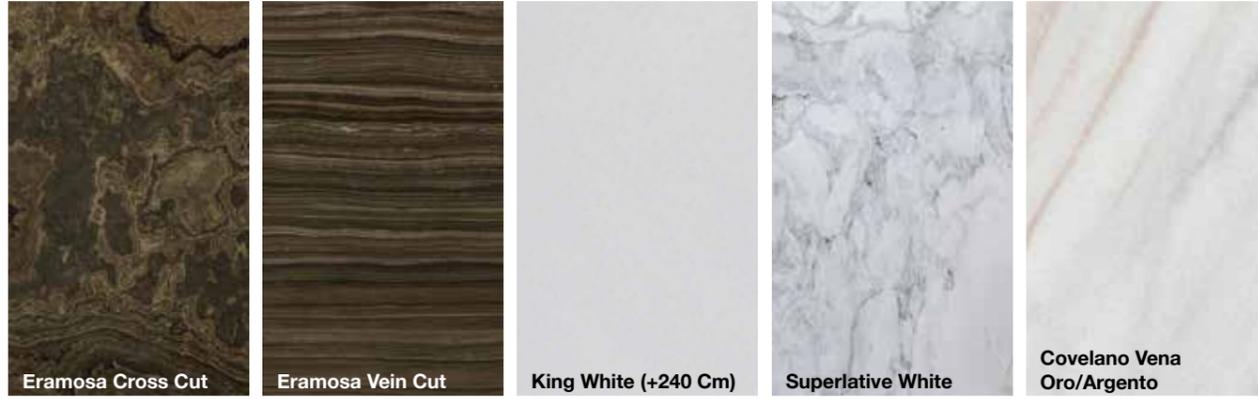


Calacatta Ovulato

# Materials

\_NATURAL AIR

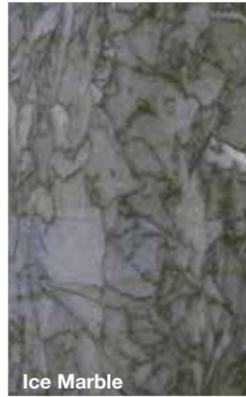
## MARBLE COD. NF12



## MARBLE COD. NF16



## MARBLE COD. NF13



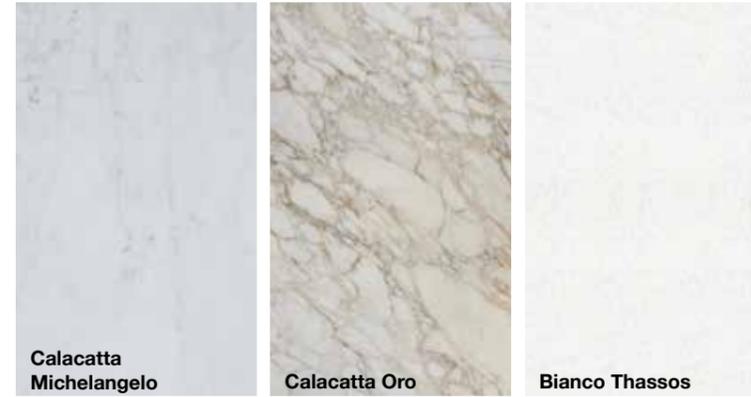
## MARBLE COD. NF14



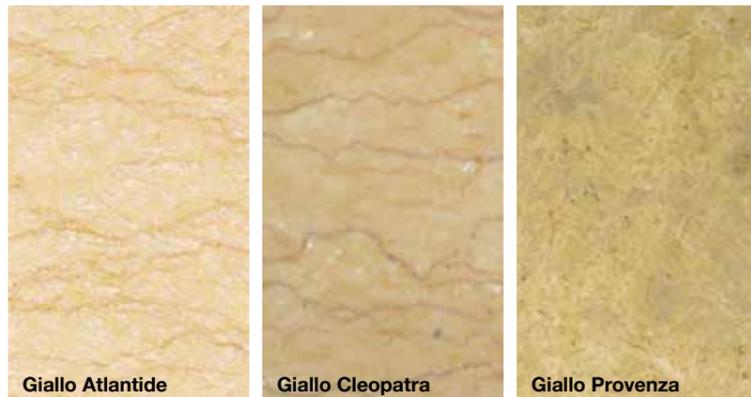
## MARBLE COD. NF15



## MARBLE COD. NF17



## MARBLE COD. NF11



## MARBLE COD. NF18



## MARBLE COD. NF19



## MARBLE COD. NF20



# Materials

\_NATURAL AIR

## TRAVERTINE

**COD. NF3**



Travertino Seaweed



Travertino Classico



Travertino Rosa



Travertino Noce



Golden Brown

## LIMESTONE

**COD. NF1**



Mocha Cream



Saint Hubert Limestone



Moleanos Limestone

## TRAVERTINE

**COD. NF4**



Travertino Samantha



Travertino Walnut



Travertino Silver



Travertino White

## LIMESTONE

**COD. NF2**



Juka Limestone Beige



Juka Limestone Grey

## TRAVERTINE

**COD. NF6**



Travertino Rosso

## TRAVERTINE

**COD. NF7**



Travertino New Navona

## LIMESTONE

**COD. NF3**



Indiana Limestone



Shell Reef Limestone

# Stone finishes and treatments

\_NATURAL AIR



**HONED**

Marble / Travertine / Limestone  
Granite / Sandstone



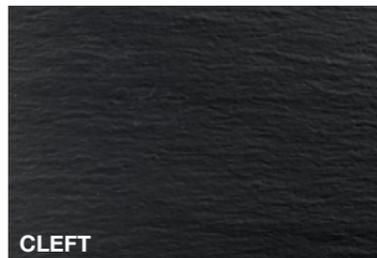
**POLISHED**

Marble / Travertine / Limestone  
Granite / Sandstone



**BRUSHED**

Marble / Travertine / Limestone  
Granite / Sandstone



**CLEFT**

Marble / Travertine / Limestone  
Granite / Sandstone



**BUSH HAMMERED**

Marble / Travertine / Limestone  
Granite / Sandstone



**FLAMED**

Marble / Travertine / Limestone  
Granite / Sandstone



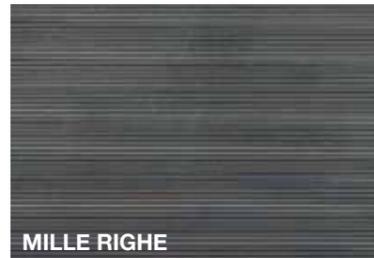
**SCRATCH**

Marble / Travertine / Limestone  
Granite / Sandstone



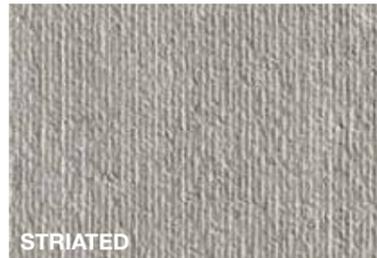
**MILLE QUADRI**

Marble / Travertine / Limestone  
Granite / Sandstone



**MILLE RIGHE**

Marble / Travertine / Limestone  
Granite / Sandstone



**STRIATED**

Marble / Travertine / Limestone  
Granite / Sandstone



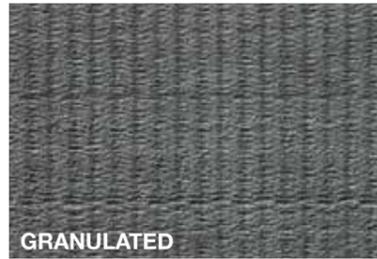
**ROLLING**

Marble / Travertine / Limestone  
Granite / Sandstone



**SANDBLASTED**

Marble / Travertine / Limestone  
Granite / Sandstone



**GRANULATED**

Marble / Travertine / Limestone  
Granite / Sandstone



**VELVET**

Marble / Travertine / Limestone  
Granite / Sandstone



## 3D AIR

Thanks to the GammaStone 3D AIR solution, the combination of different materials with various thicknesses is now possible, enabling the creation of 3D effect panels customizable by the designer.



## MATTONCINI AIR

The GammaStone Mattoncini AIR solution guarantees mechanical installation of stone bricks with the advantage of fast installation and beautiful aesthetics. The panel is supplied and pointed with mortar ready for installation. The joints between panels are designed to guarantee a unique effect on the entire facade.

«That of the architect is an ancient craft such as hunting, fishing, cultivating and exploring. After the search for food comes the search for the dwelling. At a certain point, the man, dissatisfied with the shelters offered by nature, became an architect.»

(Renzo Piano)

**GLASS AIR**

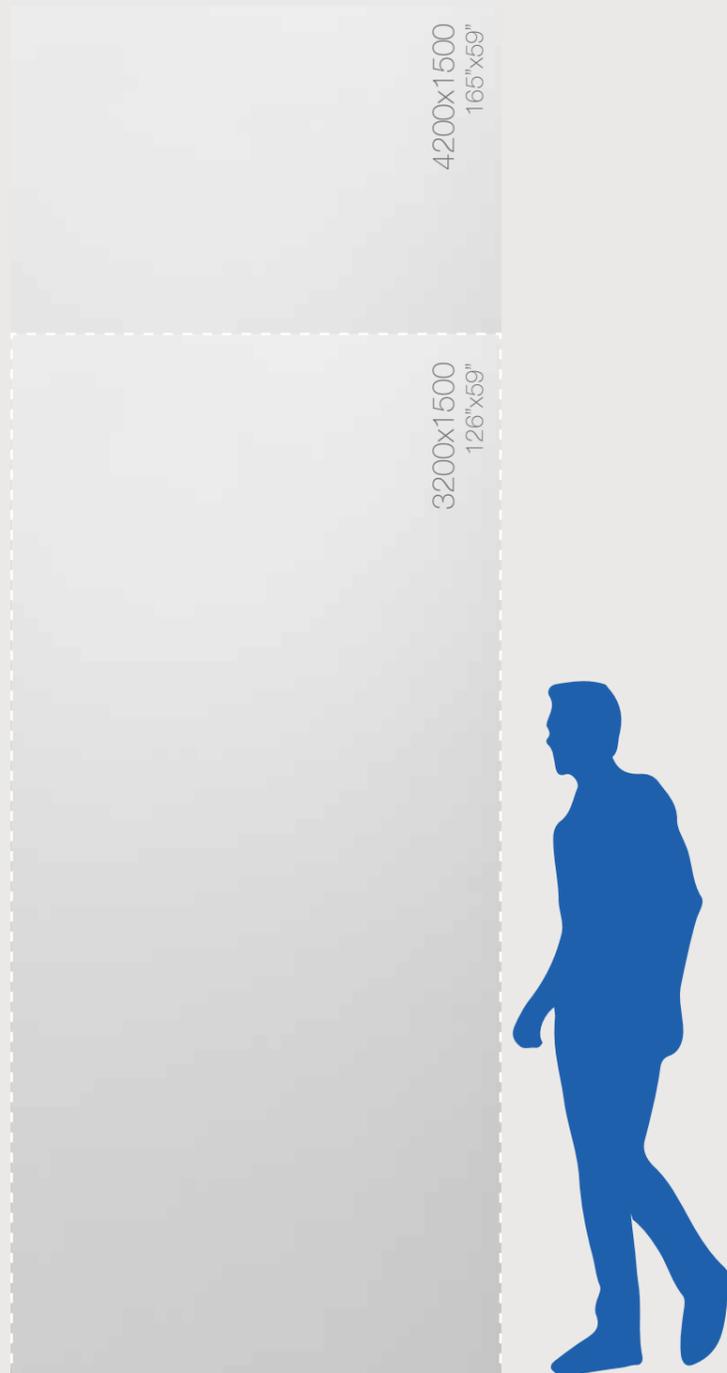
FINISHES  
full size

White

# Sizes panels

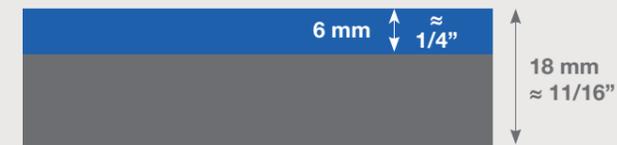
\_GLASS AIR

GammaStone AIR's in lightweight back-lacquered glass allows the mechanical installation, both indoor and outdoor, of extremely lightweight panels in large-formatsizes. It also provides a high level of resistance against breakage by shock, far superior to traditional solutions with laminated glass. Available sizes up to 4200x1500 mm and all sub-sizes obtained by cutting the standard ones. THE FLOAT OR TEMPERED GLASS IS APPLIED DEPENDING ON THE SIZES AND REQUIRED APPLICATIONS.

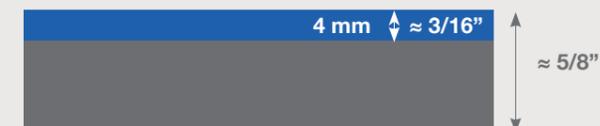


	Max panel sizes	Total panel thickness	Glass thickness	Panel weight
Section A	4200x1500 mm (6,300 m <sup>2</sup> )	18 mm	6 mm	21 kg/m <sup>2</sup>
	165,35"x59,06" (67,81 ft <sup>2</sup> )	≈ 11/16"	≈ 1/4"	4.3 lb/sqft
Section B	3200x1500 mm (4,800 m <sup>2</sup> )	16 mm	4 mm	16 kg/mq
	128,98"x59,06" (51,67 ft <sup>2</sup> )	≈ 5/8"	≈ 3/16"	3.3 lb/sqft

### Section A



### Section B



### GLASS TYPES

Extra light  
Float

### BACK-LACQUERED

Lacquered  
Reflective  
Silk printed

### FINISH GLASS

Polish  
Sandblasted  
Satin

### EDGE

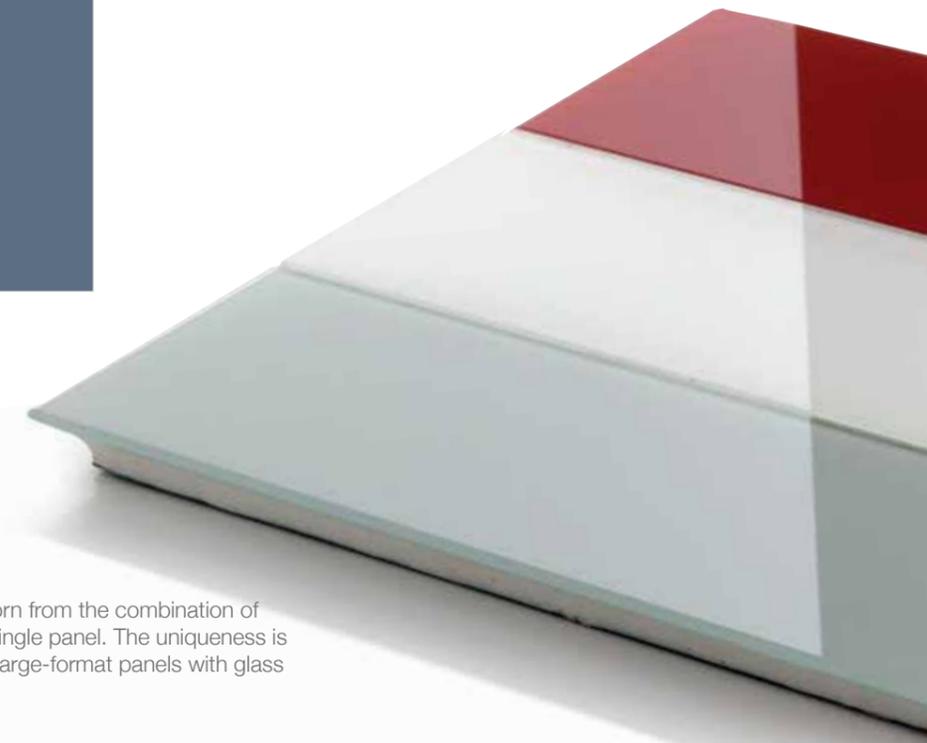
Rough edge  
Matte edge

Tempered on request

# Colors

\_GLASS AIR

Any other color is available on request



## BICOLOR

GammaStone Bicolor AIR solution was born from the combination of different colorcolored glass applied on a single panel. The uniqueness is given by the infinite possibilities to realize large-format panels with glass finishes in different colorcolors and types.

**TX ACTIVE technology** (patented by Italcementi) makes the GFRC Plus cement mortar photocatalytic. The active principle in the material “captures” air pollutants when it is exposed to the sunlight. It changes certain harmful substances in inert salts, helping to free up the atmosphere from the smog.



**80%**  
RECYCLED  
MATERIALS

**GFRC PLUS AIR**

BIO-ACTIVE (Photocatalytic Self-cleaning)

FINISHES  
full size

White



## Sizes panels

\_GFRC PLUS AIR

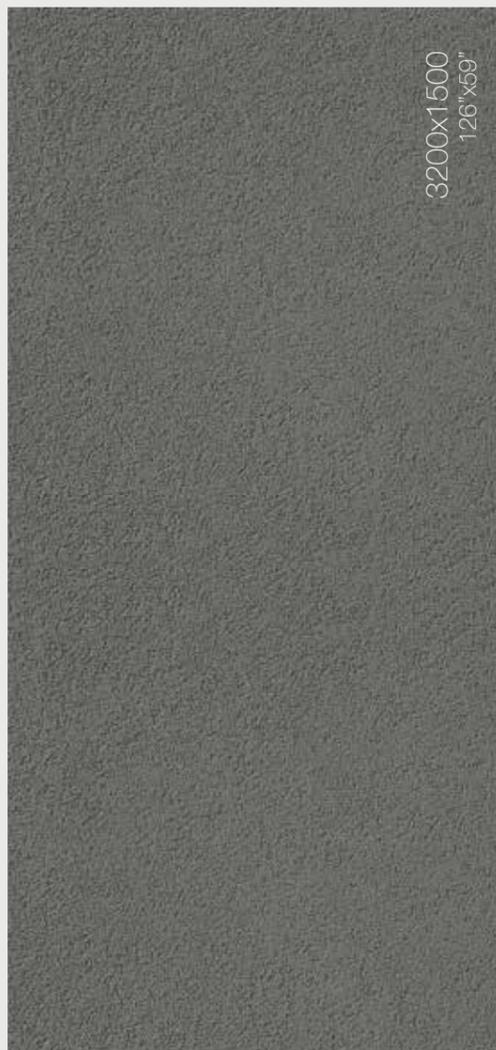
The panel is composed by an ultra-thin mortar slab (high-performance photocatalytic and self-cleaning, reinforced with amorphous metal fibers), a structural core interposed between two fiberglass mats and a 0.5 mm stainless steel plate. This biodynamic concrete has durable aesthetic characteristics, reducing and simplifying maintenance.



AMORPHOUS METAL FIBERS

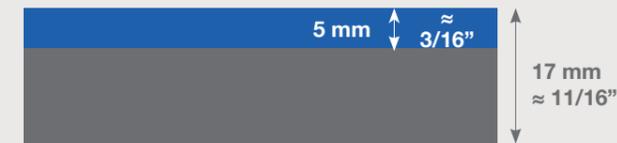


The mortar also includes the use for the 80% of recycled aggregates, in part coming from the working dust of Carrara marble, that gives a superior brightness compared to the traditional white concretes. It includes also, amorphous metal fibers in order to make the material more resistant.



	Max panel sizes	Total panel thickness	Concrete thickness	Panel weight
Section A	3200x1500 mm (4,800 m <sup>2</sup> )	17 mm	5 mm	18 kg/m <sup>2</sup>
	125,98"x59,06" (51,67 ft <sup>2</sup> )	≈ 11/16"	≈ 3/16"	3.7 lb/sqft

### Section A



	Ordinary cement mortar*	BIO ACTIVE
Initial fluidity	100 mm	> 300 mm
Compressive strength	30 MPa	> 60 MPa
Flexural strength	5 MPa	> 10 MPa

\* mortars for traditional applications, or a mixture of hydraulic binders, inert, possible additives and water, in a higher water / cement ratio equal to 0.5

### APPLICATIONS

- Concrete product with high aesthetic value
- Prefabricated elements with high quality texture
- Non-structural architectural elements
- Facade panels, with no continuous sections, with very complex shapes
- Facade panels with continuous sections

# Colors

\_GFRC PLUS AIR

Any other color is available on request



## Finishing

\_GFRC PLUS AIR

The finish can be personalized at the specific request of the designer

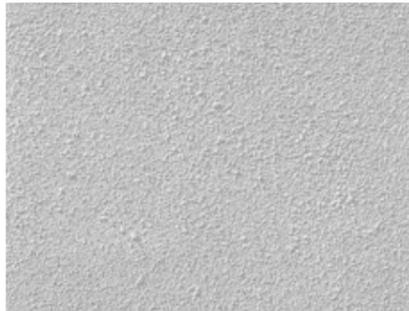
A wide range of texture patterns is available



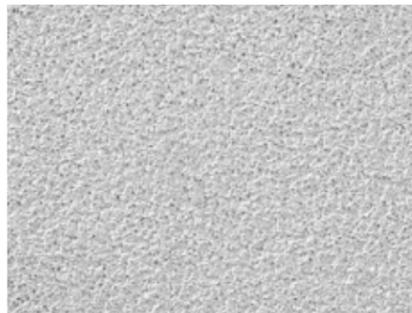
2/34 LAHN



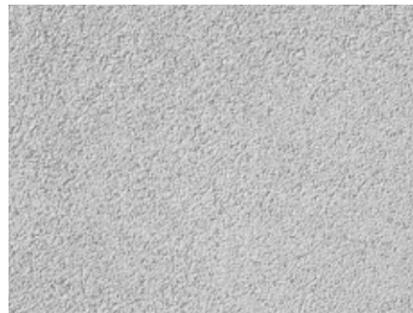
2/62 TEVERE



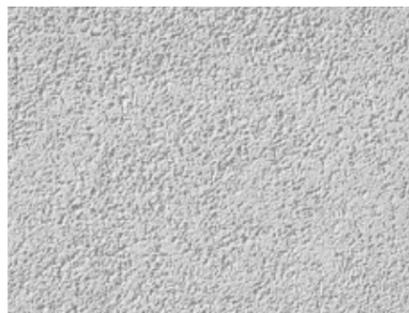
2/93 RED RIVER



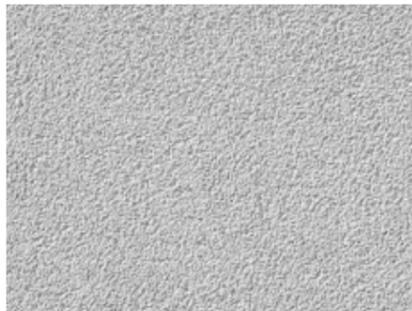
2/76 NIL



2/103 LENA



2/92 RIO BRAVO



2/102 PARANA



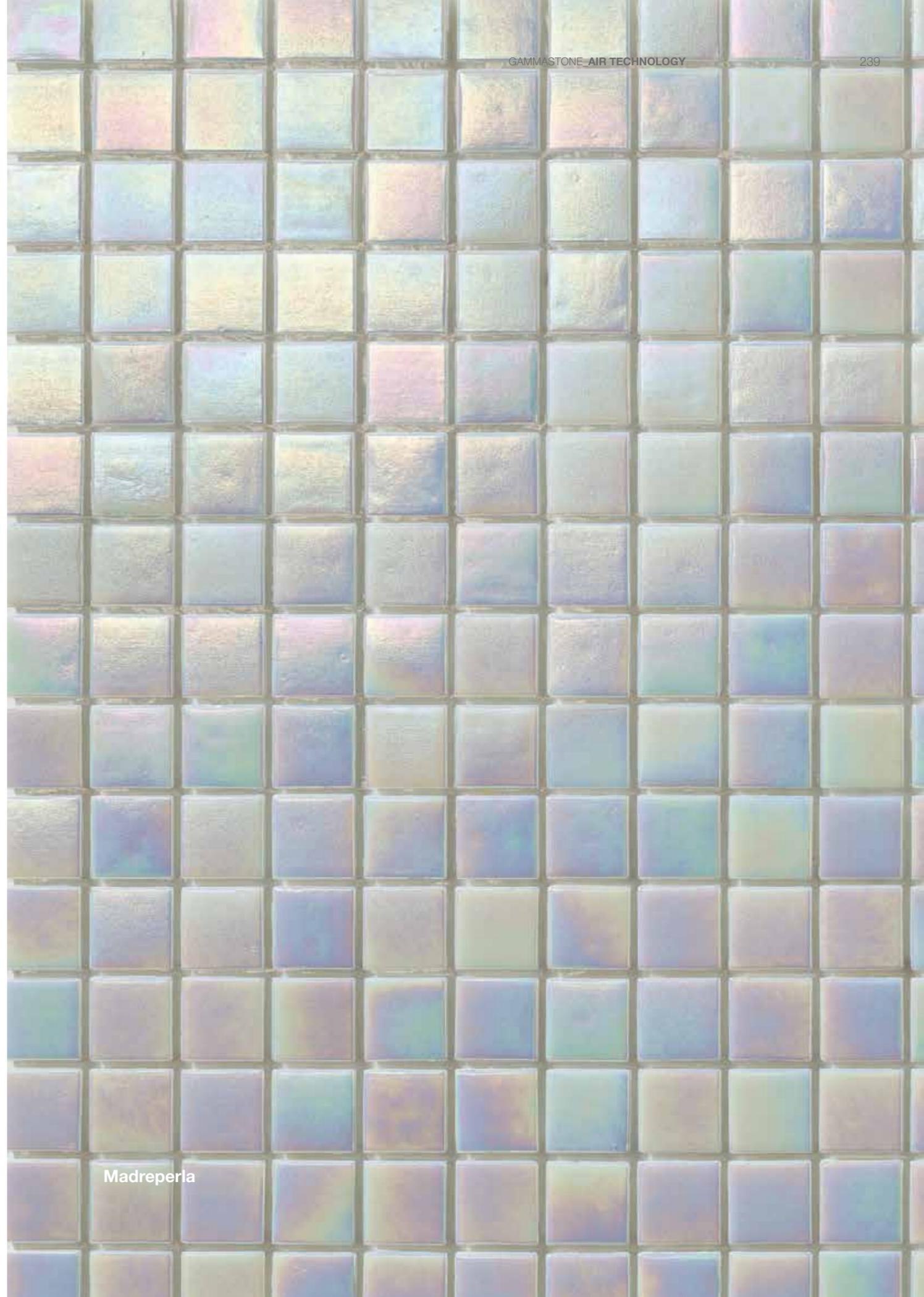
2/131 LAUSITZ

«Architecture is the way in which man has tried to inhabit the earth, to protect himself from the elements, but above all to make his existence evident.»

(Paolo Portoghesi)

MOSAIC AIR

FINISHES  
full size

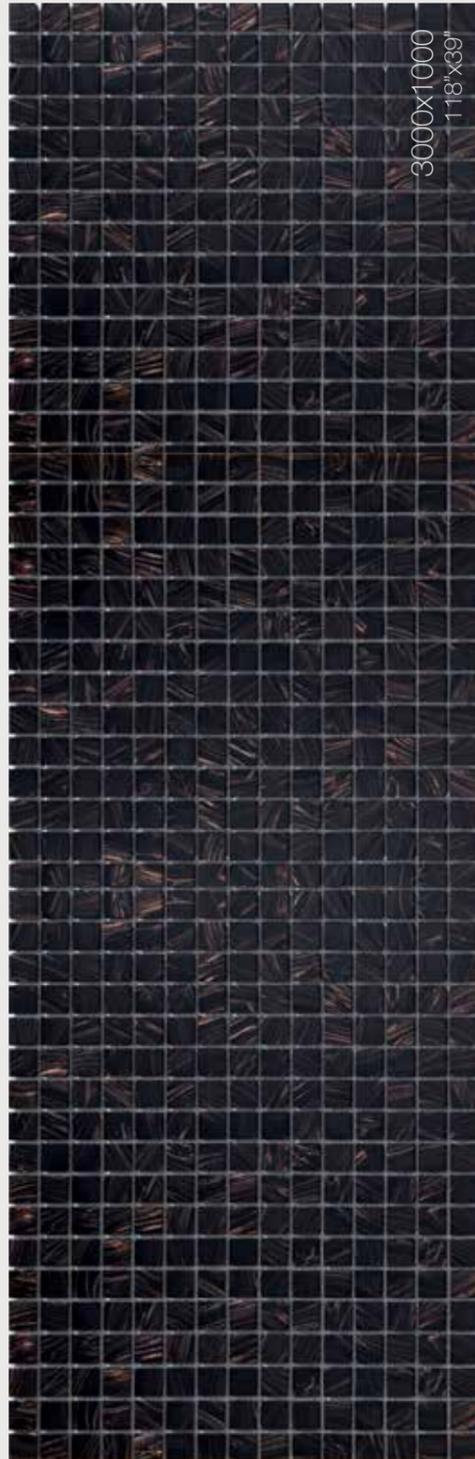


Madreperla

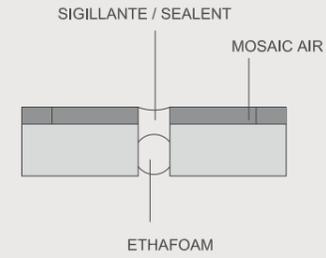
# Sizes panels

\_MOSAIC AIR

GammaStone Mosaic AIR solution allows mechanical installation of ceramic or glass mosaic with the advantage of fast installation and beautiful aesthetics. The panel is supplied with epoxy resins within the joints and ready for installation. The joint between panels is designed to provide a uniuquemosaic effect on the entire façade.

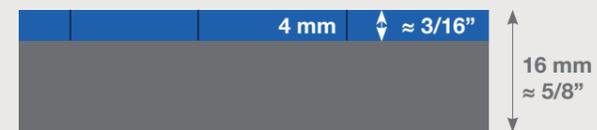


## CLOSED JOINT SOLUTION



	Max panel sizes	Total panel thickness	Mosaic thickness	Panel weight
Section A	2914x970 mm (2,826 m <sup>2</sup> )	16 mm	4 mm	16 kg/m <sup>2</sup>
	114"x38,19" (30,42 ft <sup>2</sup> )	≈ 5/8"	≈ 3/16"	3.3 lb/sqft

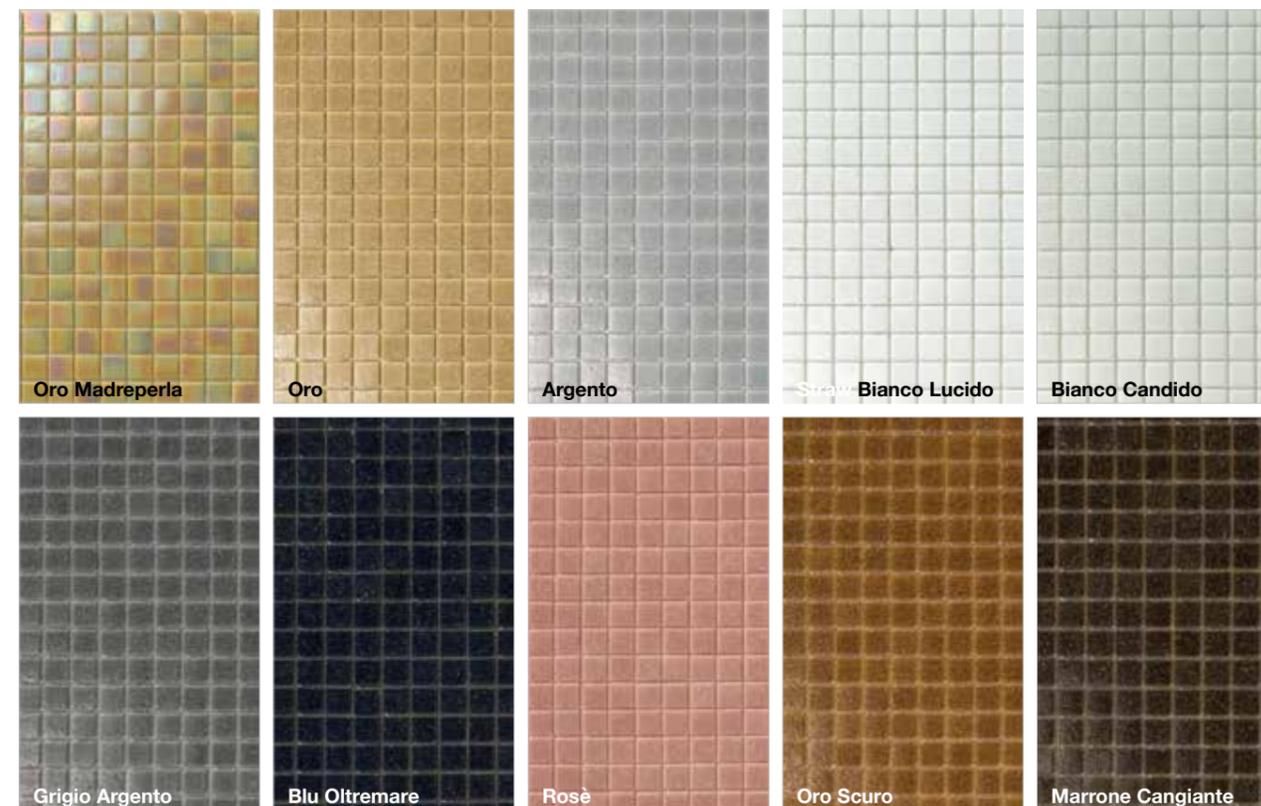
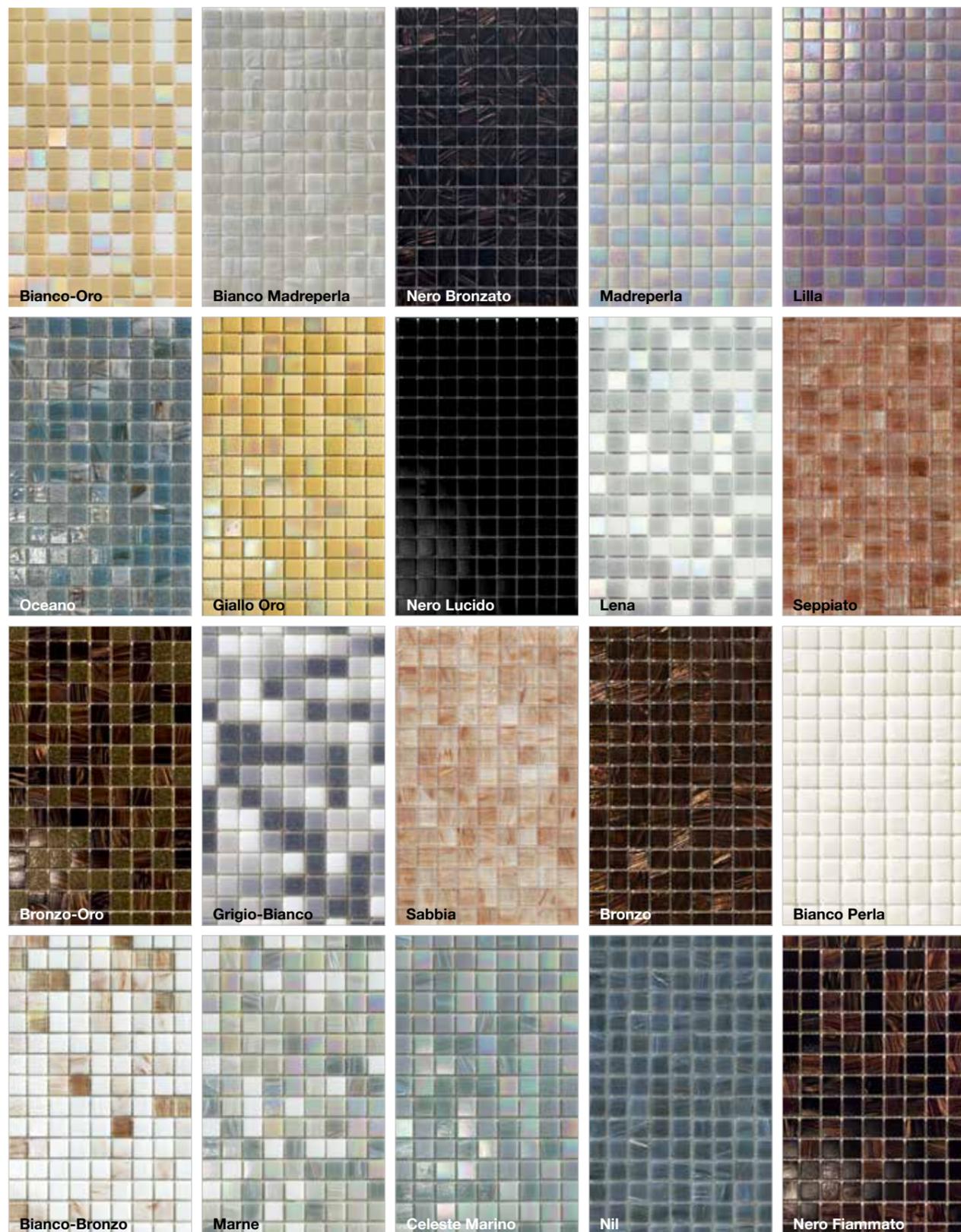
### Section A



# Colours

\_MOSAIC AIR

All kind of glass and ceramic mosaic are available



«If you make works in series, you are not architects but workers: and this is because from my point of view, architecture is invention, and as an invention it is art.»

(Oscar Niemeyer)

BRICK AIR

FINISHES  
full size

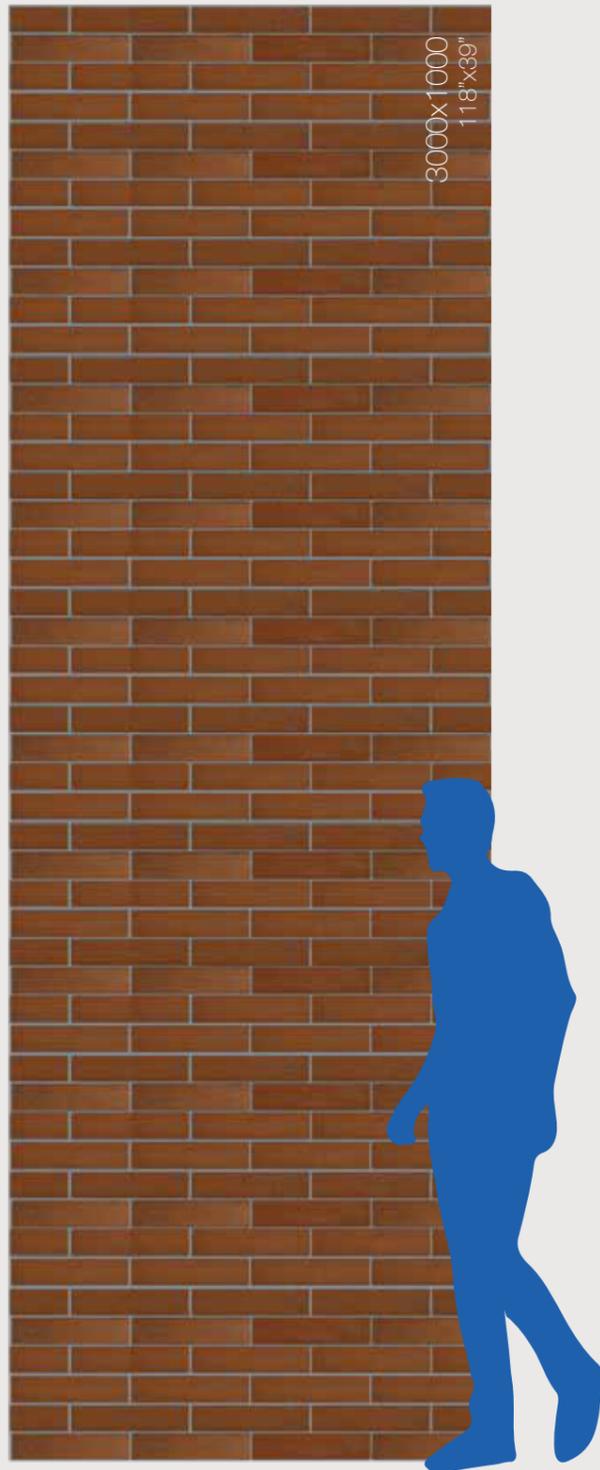
Klinker C  
Facciavista Longformat

# Sizes panels

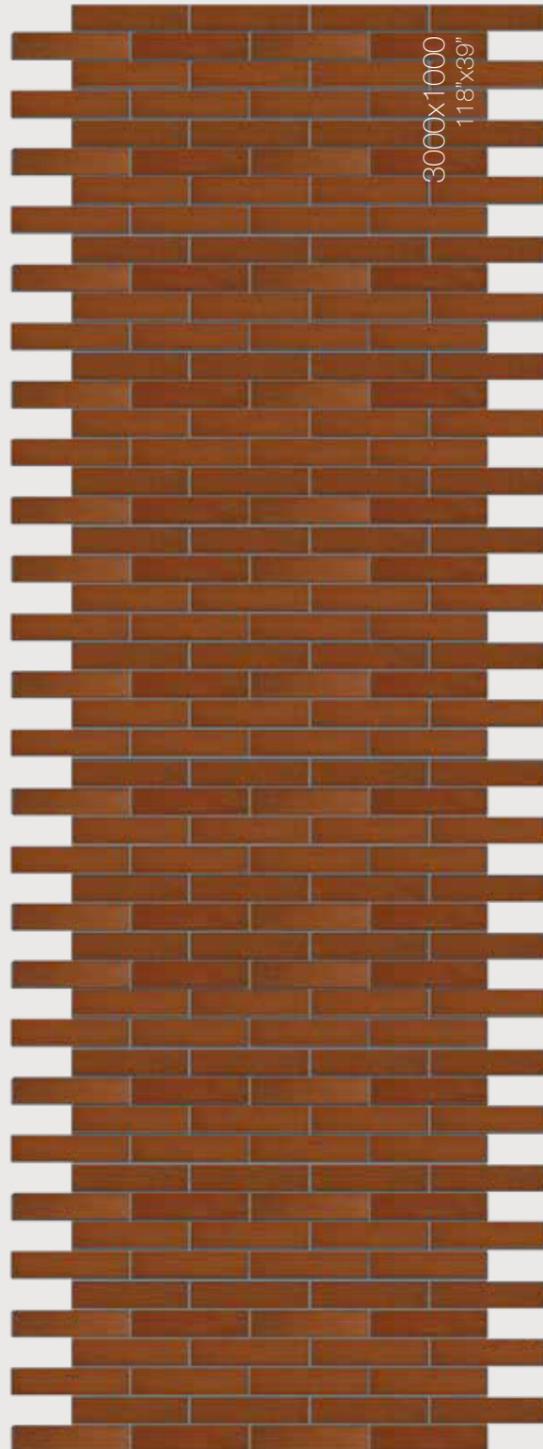
\_BRICK AIR

GammaStone Brick AIR solution allows dry installation of Klinker or porcelain bricks with advantages of a fast installation and beautiful aesthetics. The panel is supplied and pointed with mortar ready for installation. The joints between panels are designed to guarantee a unique effect on the entire façade.

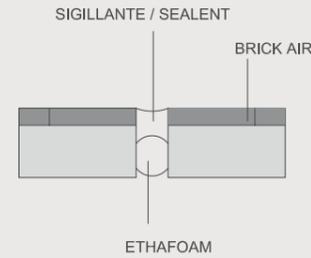
## Solution without “zip”



## “zip” solution

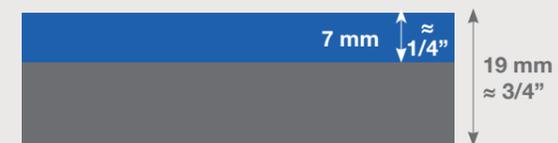


### CLOSED JOINT SOLUTION

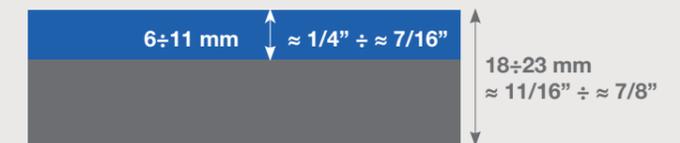


	Max panel sizes	Total panel thickness	Brick thickness	Panel weight
Section <b>Brick Gres</b>	3000x1000 mm (3,00 m <sup>2</sup> )	19 mm	7 mm	17 kg/m <sup>2</sup>
	118"x 39" (32 ft <sup>2</sup> )	≈ 3/4"	≈ 1/4"	3.5 lb/sqft
Section <b>Klinker B</b>	3000x1000 mm (3,00 m <sup>2</sup> )	18÷23 mm	6÷11 mm	27÷30 kg/m <sup>2</sup>
	118"x 39" (32 ft <sup>2</sup> )	≈ 11/16" ÷ ≈ 7/8"	≈ 1/4" ÷ ≈ 7/16"	5.5÷6.1 lb/sqft
Section <b>Klinker C</b>	3000x1000 mm (3,00 m <sup>2</sup> )	27 mm	15 mm	22 kg/m <sup>2</sup>
	118"x 39" (32 ft <sup>2</sup> )	≈ 1 1/16"	≈ 9/16"	4.5 lb/sqft
Section <b>Facciavista</b>	3000x1000 mm (3,00 m <sup>2</sup> )	32 mm	20 mm	22 kg/m <sup>2</sup>
	118"x 39" (32 ft <sup>2</sup> )	≈ 1 1/14"	≈ 3/4"	4.5 lb/sqft

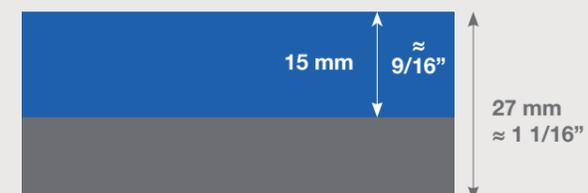
#### Section **Brick Gres**



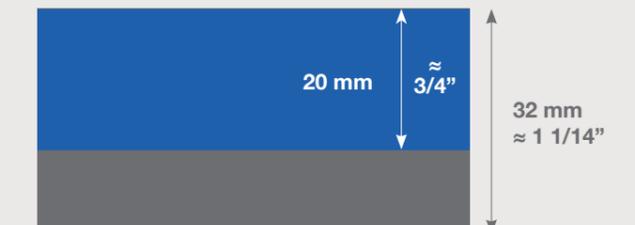
#### Section **Klinker B**



#### Section **Klinker C**

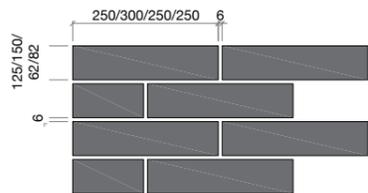


#### Section **Facciavista**

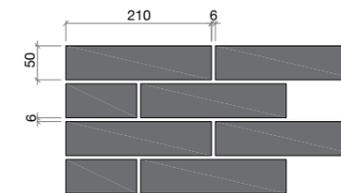


# Colors

\_BRICK AIR



BRICK KLINKER B  
COD. BR1

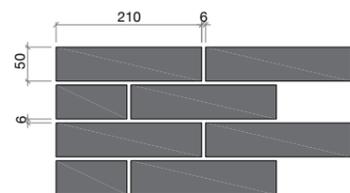


BRICK KLINKER C  
COD. BR1

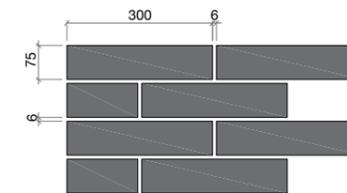
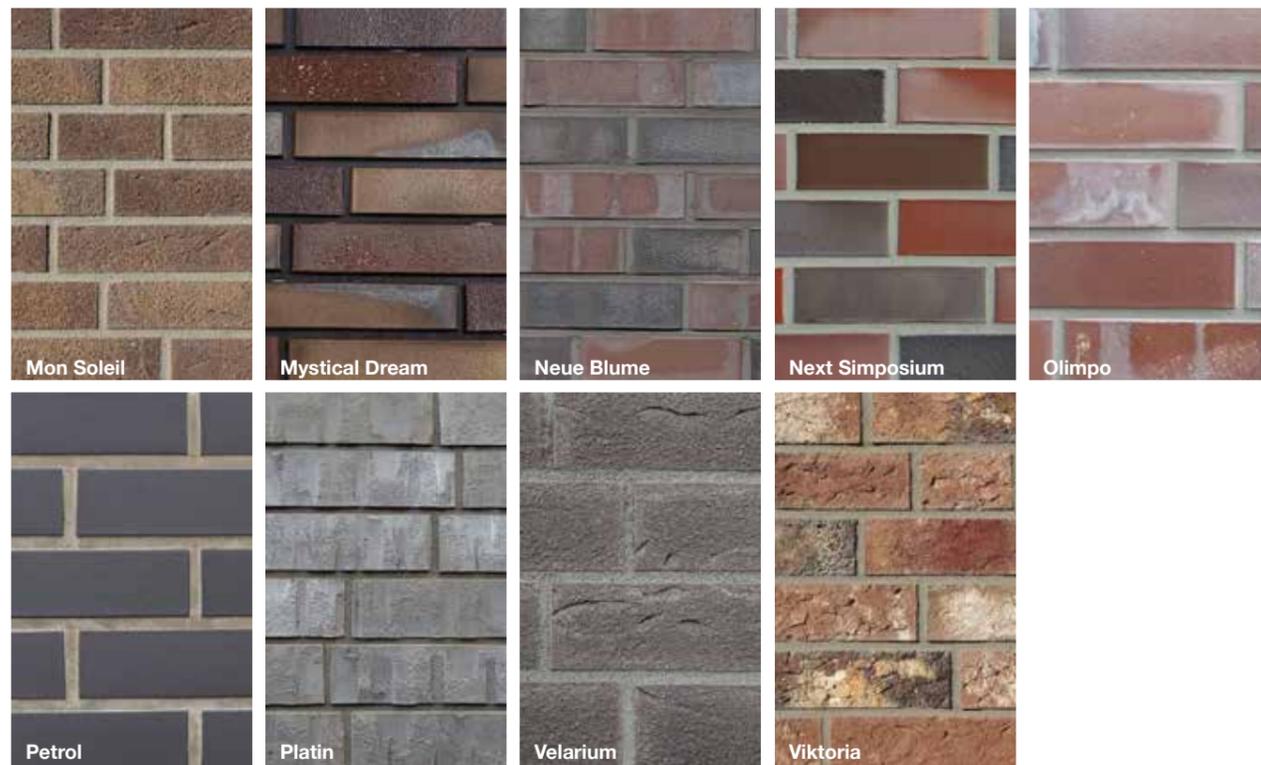


# Colors

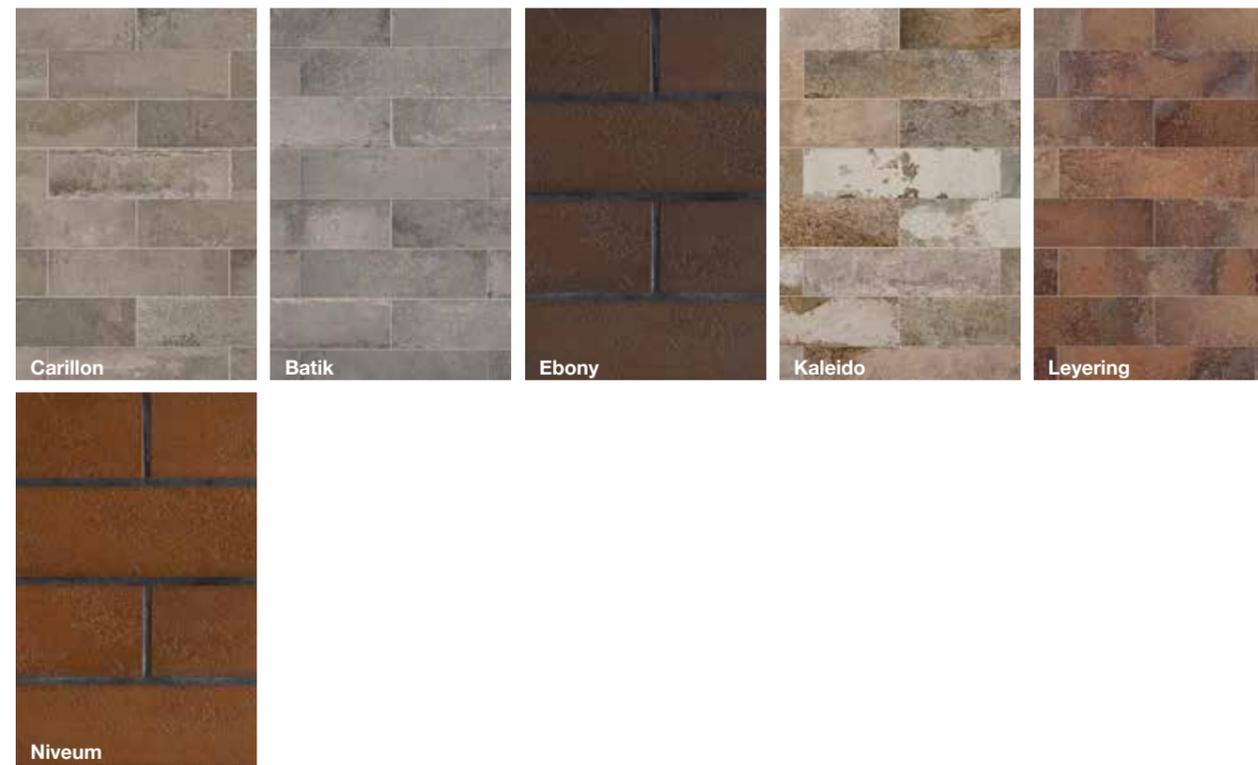
\_BRICK AIR



BRICK KLINKER C  
COD. BR1

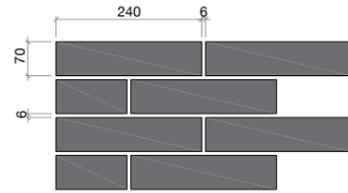


BRICK GRES  
COD. BR2

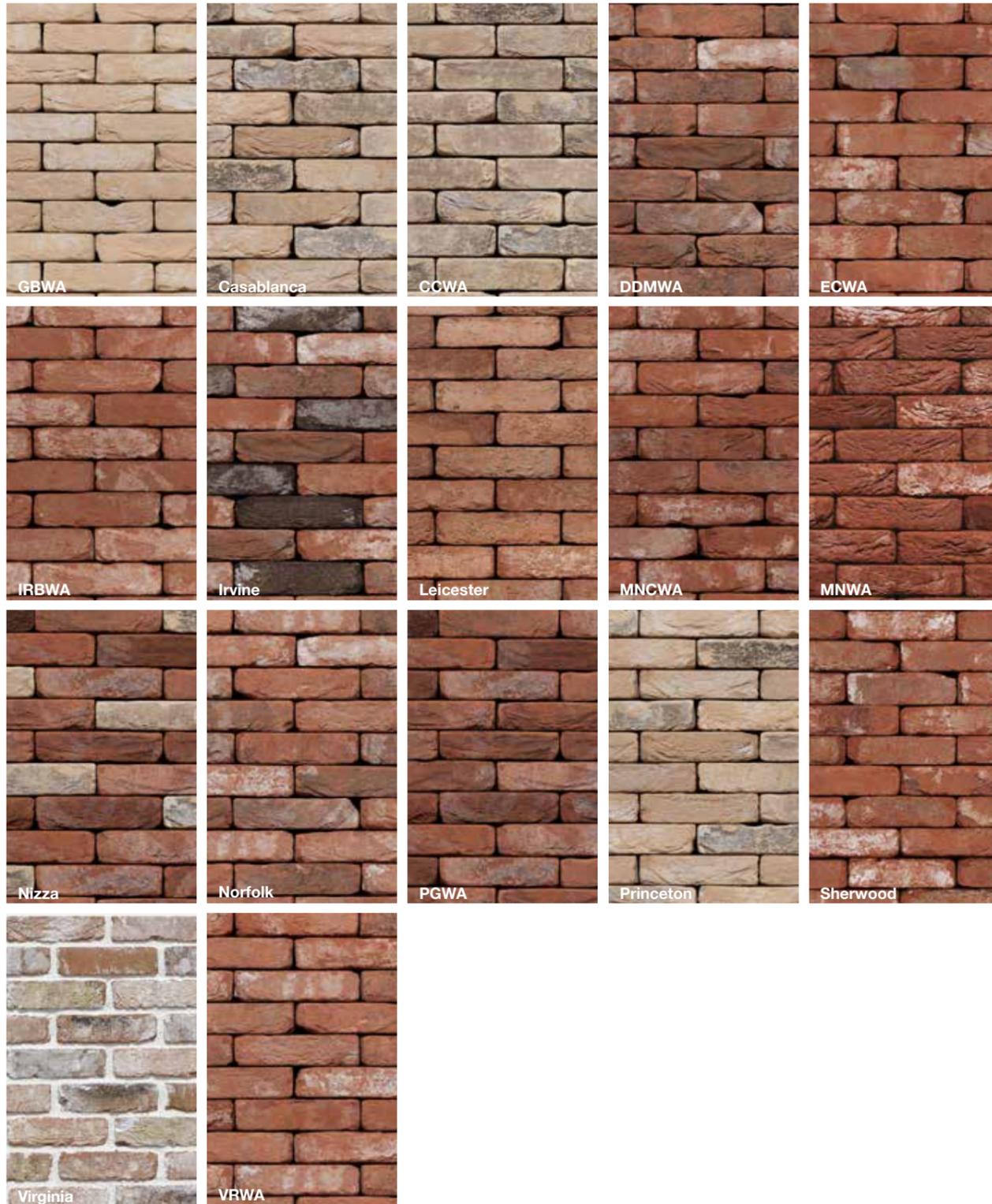


# Colors

\_BRICK AIR



BRICK FACCIAVISTA  
COD. BR3



Solution Without "Zip"



"Zip" Solution

# TECHNICAL BOOKLET

## INDEX

256. VENTILATED FAÇADES  
Thermo-Fluid Dynamic System  
Technical Draw

274. CURTAIN WALL  
Technical Draw

284. TYPES OF CORNERS  
Monolithic 90°  
Monolithic >90°  
Monolithic <90°  
Miter  
Corner Light  
Quirk Miter  
Quirk Assembled  
Butt Joint

304. COLUMNS AND STRINGCOURSES  
Technical Draw

312. CURVED PANELS  
Technical Draw

316. SUNBLADES

318. CEILING COATING

320. CLOSED JOINT  
Technical Draw

326. DOORS COATING

328. WORKING PHASES

330. IMPACT RESISTANT & COMPRESSIONS

332. MANUFACTURING TECHNIQUES  
Glass Air, Gres Air, Natural Air, GFRC Plus Air, Mosaic Air and Brick Air

340. SERVICES

Building Information Modeling (BIM) Services  
Stone Sourcing Services  
Design Services  
Product configurator  
Static analysis  
Assembly plan  
Installation

354. CERTIFICATIONS  
Fire Performance  
Intertek  
Rina

360. PARTNERS

362. TECHNICAL DATA SHEET  
GRES AIR  
NATURAL AIR  
GLASS AIR  
GFRC PLUS AIR  
MOSAIC AIR  
BRICK AIR

374. Panels & Mock-up

377. Sample Box

378. SPECIFICATIONS

# VENTILATED FAÇADES

Easy installation and versatility in architectural design

GammaStone AIR is the most important technological challenge in the international industry of ventilated facades and its the result of huge R&D investments together with the skilled work of expert teams of Architects, engineers, and designers. Our continuous team work for the improvement of innovative and revolutionary building systems with the aim of harmonizing the aesthetic charm with the best results from the technical and functional point of view. GammaStone AIR is an advanced eco-sustainable system able to satisfy the most ambitious and modern stylistic trends of architecture. It also optimizes the functional requirements, the practicality and the comfort of living. **Our ventilated façades, resulted from an intense research process, are an answer to the widespread need of efficient thermal and acoustic isolation for homes, work environments, etc.**, with structures and materials that at the same time, guarantee an unalterable aesthetic beauty. GammaStone AIR is an excellent and unmatched cladding material; it is today the most suitable material available in the international market referring to ventilated façades. **This innovative paneling system for ventilated façades was developed in collaboration with the largest and most reliable companies in the sector.** Together with our partners we reached top results referring to insulation, protection from weather events and from external noises. GammaStone AIR panels allow easy installation, versatility in architectural design, original stylistic solutions with a high variety of large-sized marble, granite, porcelain slabs and stonework. Structurally speaking, GammaStone AIR ventilated façades are reliable; our **panels undergo strict tests against wind, compression, hurricanes, etc.** They are installed on a metal hanging structure fixed to the wall of the building with layers of insulation and protection materials are assembled within.

The function of the external panels is to protect and insulate and to create a gap between external environment and the structural wall of the building.

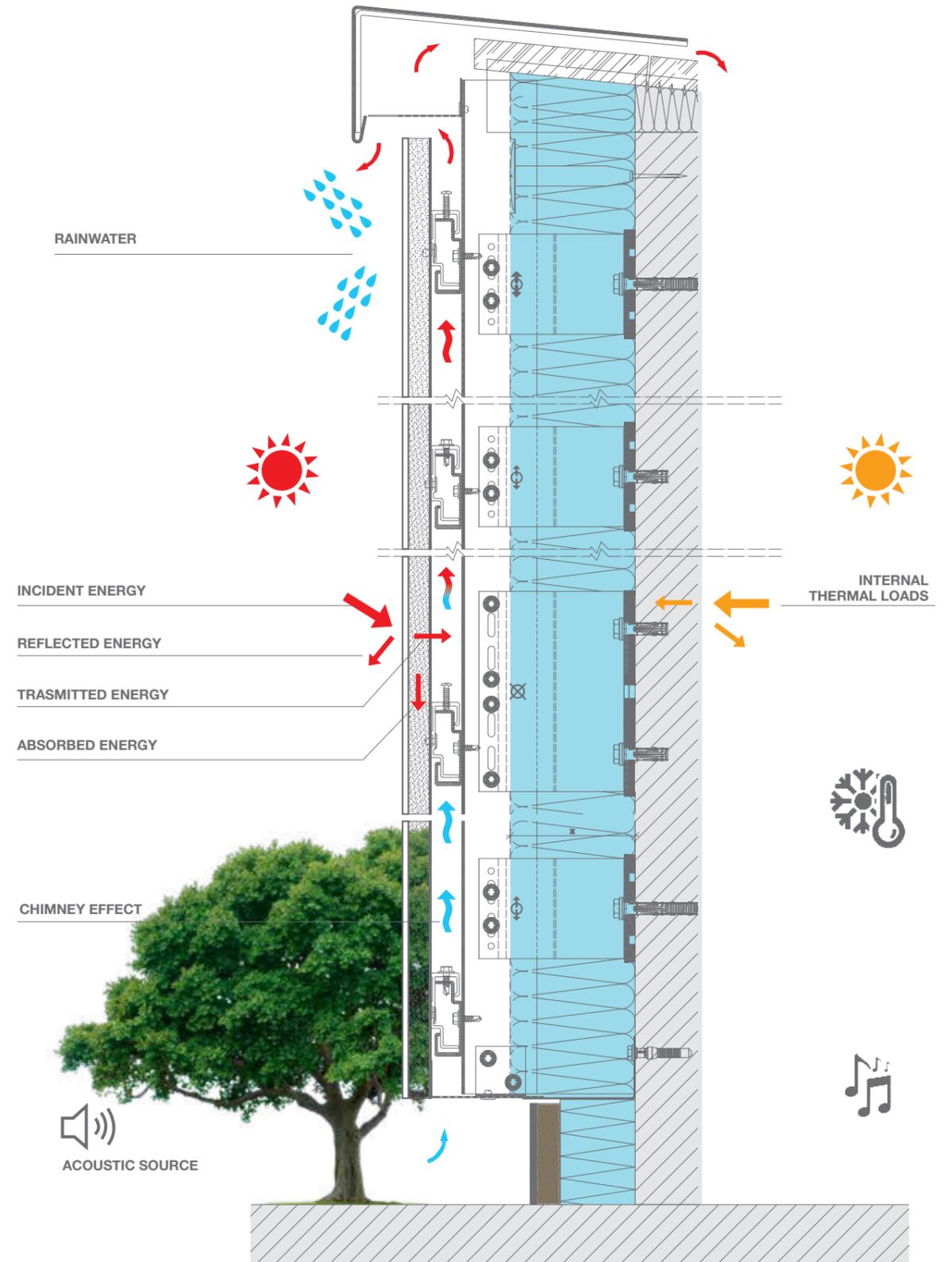
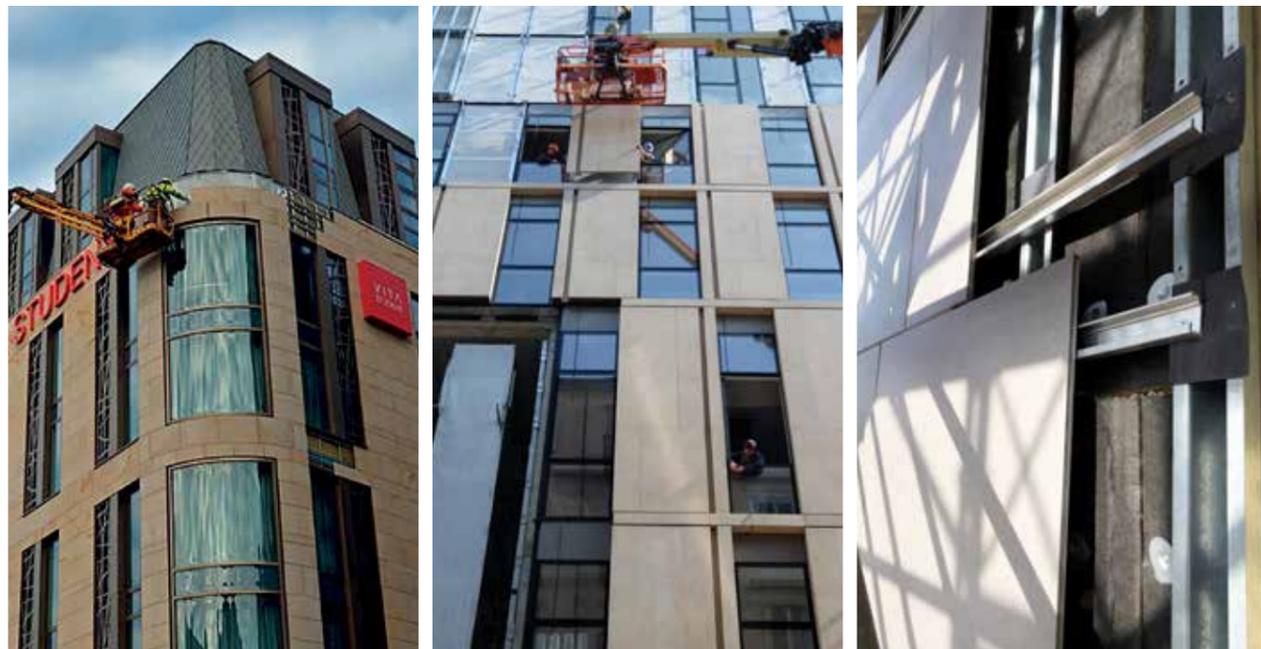


Reale Mutua Assicurazioni  
Turin - Italy

# THERMO-FLUID DYNAMIC SYSTEM

## Chimney effect

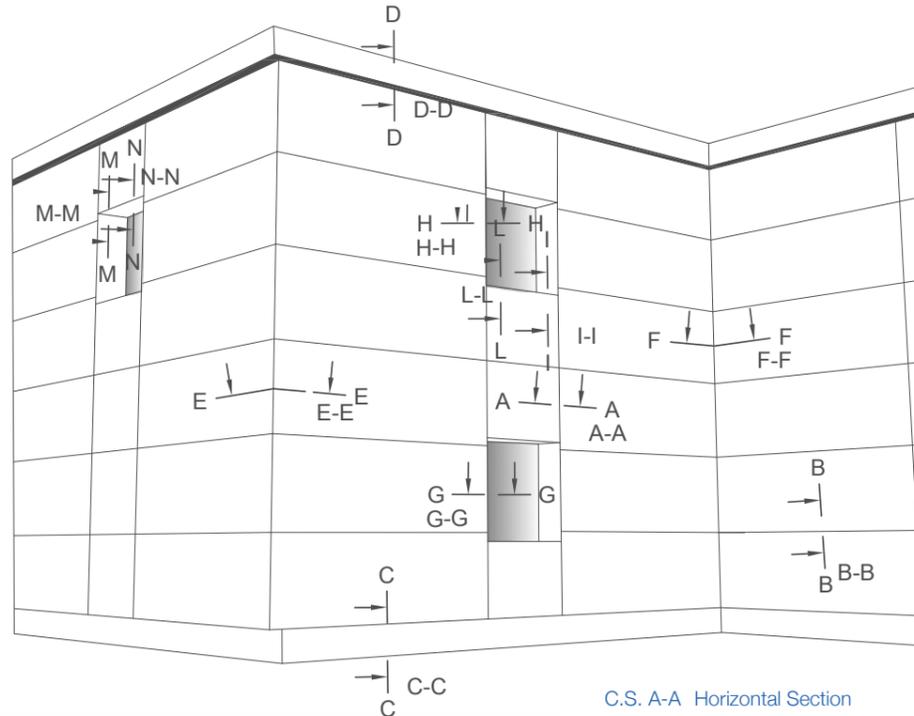
The suspension and the fixing devices of the metal structure are dimensioned so that an empty space between the insulating layer and the outer panel is created. This is an air chamber connected to the outside by air vents that are usually placed at the base and at the top of the façade creating a continuous ventilation effect in the gap. It is also called **“chimney effect”** due to the difference in temperature between the air in the ventilation chamber and the outside air. Air enters the gap from the bottom and moves upwards, thus creating an efficient airflow that maximize the transpiration of the façade. This ventilation allows the rapid elimination of aqueous vapors from the inside. Moreover, it considerably reduces the condensation and the negative effects of any penetrations of water. This led consequently to the reduction of the quantity of heat that enters or exits from the building.



# TECHNICAL DRAW

## typical details

### Ventilated Facades - Invisible Fixing Solution



- C.S. A-A Horizontal Section
- C.S. B-B Vertical Section
- C.S. C-C Base Detail
- C.S. D-D Head Detail
- C.S. E-E External Corner
- C.S. F-F Internal Corner
- C.S. G-G Window - Air Reveal
- C.S. H-H Window - Steel Reveal
- C.S. I-I Window - Steel Sill
- C.S. L-L Window - Air Sill
- C.S. M-M Window - Air Ceiling
- C.S. N-N Window - Steel Ceiling

#### CLIP RAIL FOR MECHANICAL FIXING

The GammaStone AIR Ventilated System with mechanically fixed concealed hangers offers maximum design and highest safety. This system eliminates any visible fixing device on the panel surface, which results in a clean façade with the smallest joint possible. At the same time it guarantees the highest safety as the system is certified to resist negative wind loads over 450 kg/sqm.



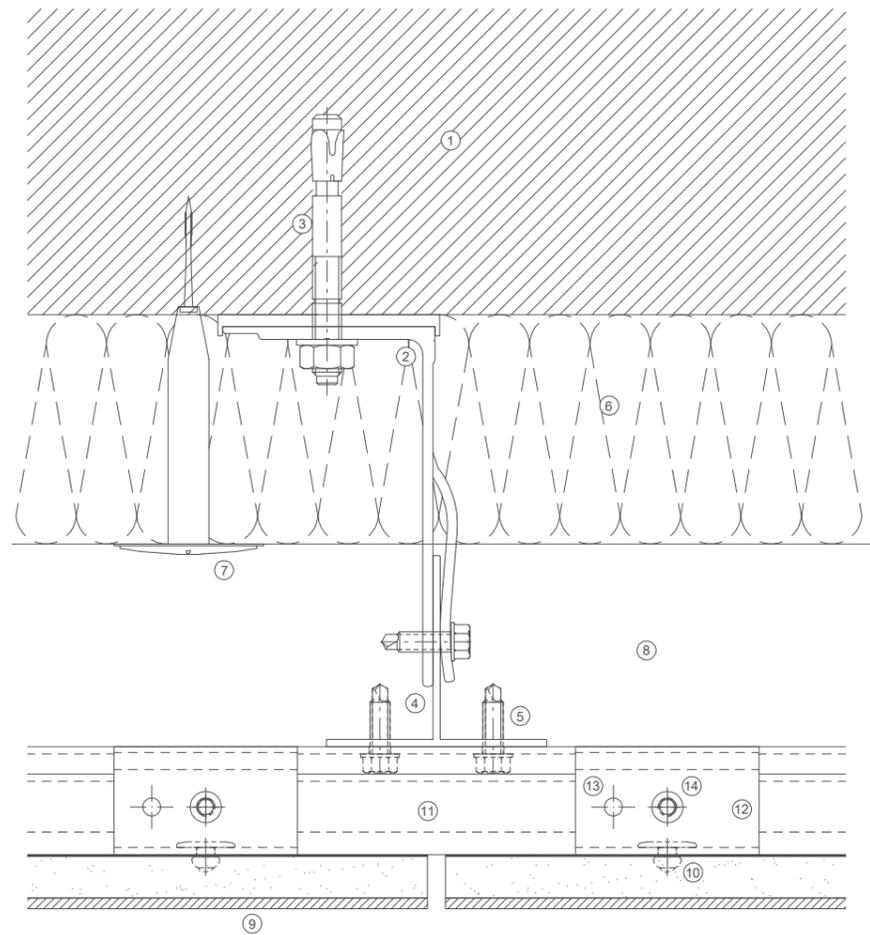
#### THE SYSTEM IS COMPOSED OF:

- BRACKET
- CLIP
- RAIL
- VERTICAL PROFILE
- GAMMASTONE AIR PANEL

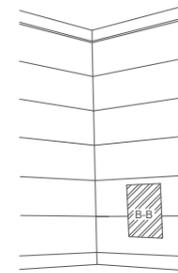


### Horizontal Cross Section A-A

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw

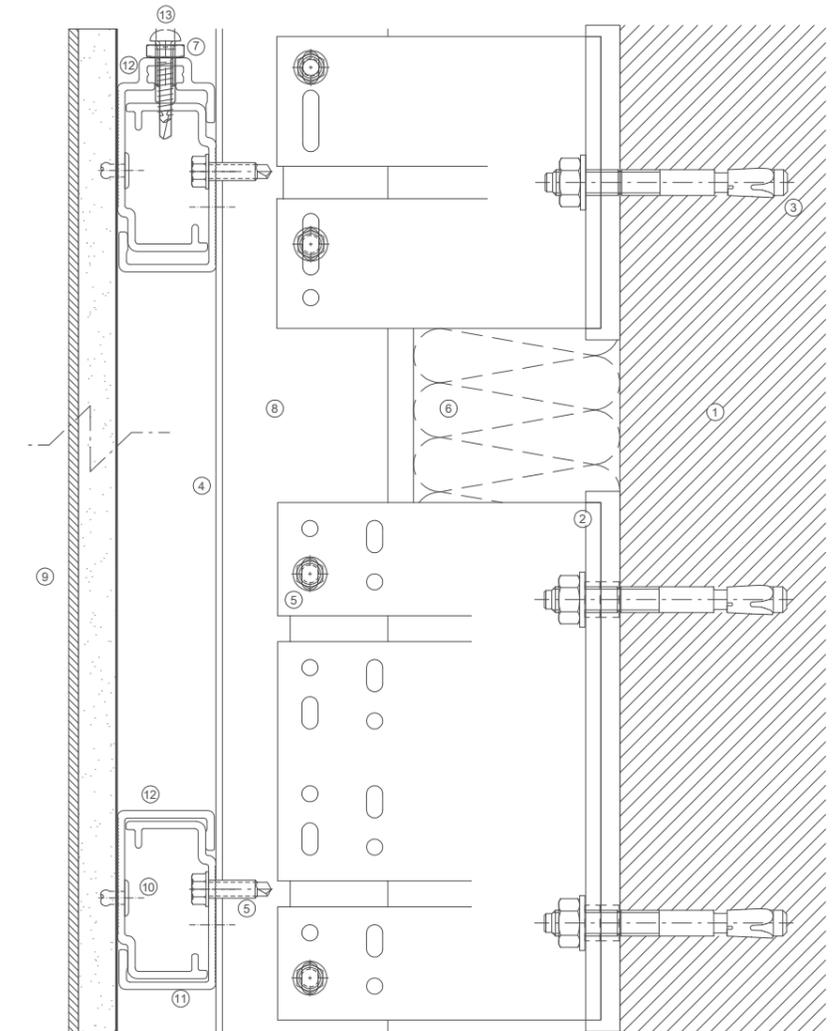


The horizontal cross section shows all components of the system. The thickness of a hard or soft insulation can vary up to 140 mm, so as the dimension of ventilation cavity of recommended minimum 30 mm can vary, based on its calculated performance.

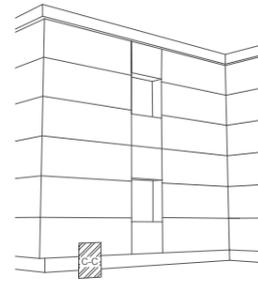


### Vertical Cross Section B-B

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Adjust. Screw
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. profile
- 12) Hanger
- 13) Fixing Screw

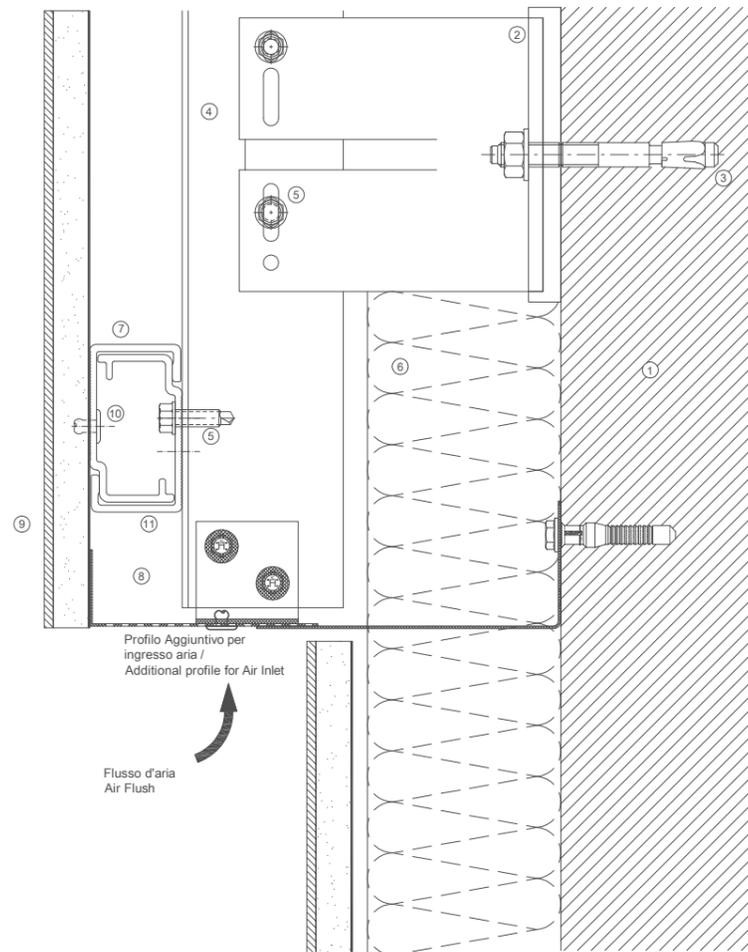


In the vertical section, the use of the brackets can be easily identified by their different dimensions. The 150 mm main bracket is of structural use and guarantees a fix point to control the linear dilatation and represents a hinge and a joint for the mullions. The smaller 80 mm bracket has a static task and allows the relative sliding between bracket and mullion. The distance between brackets and their quantity is calculated according to the static system requirements.

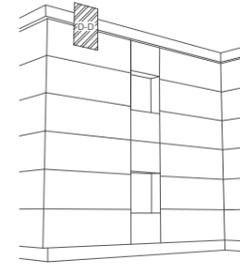


### Base Detail Section C-C

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Hanger
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. profile

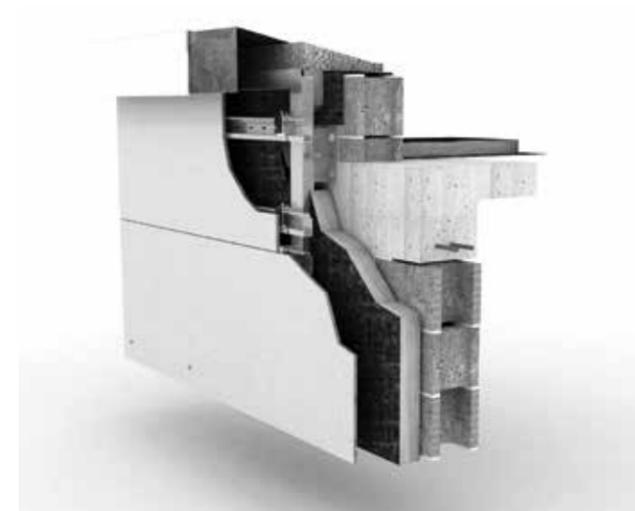
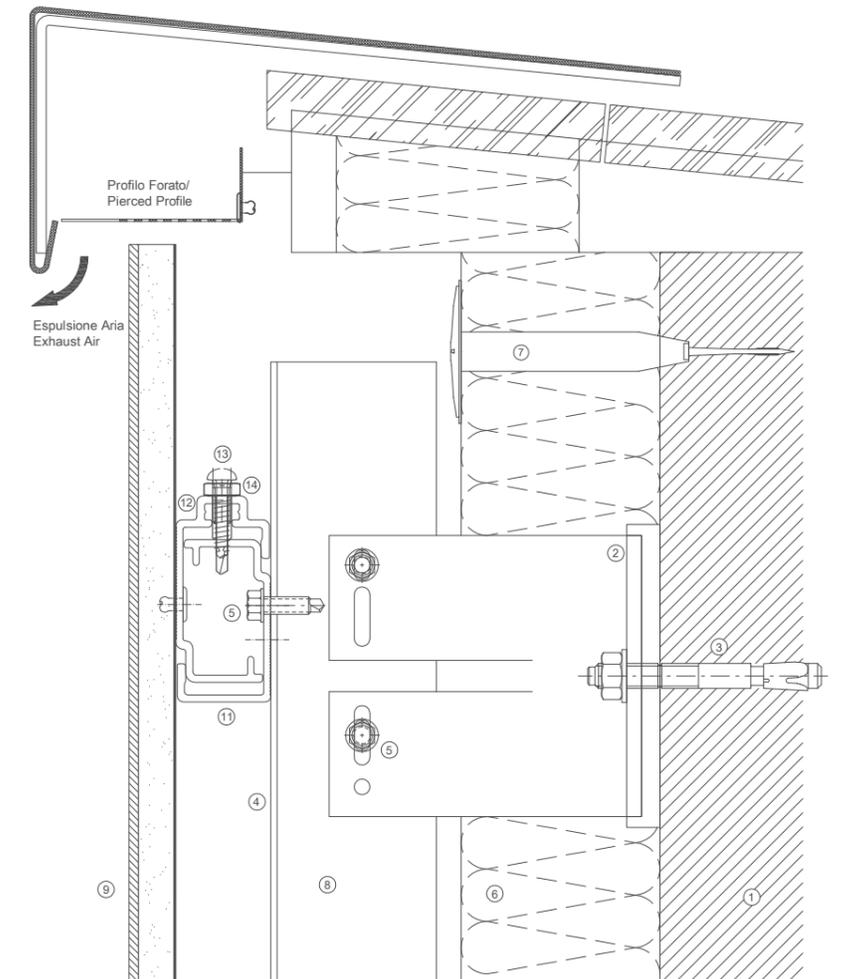


This is one of the main points of the system. This is the principal air inlet of the façade, and, if the system is well designed from the technical and fluid dynamic point of view, the air goes up to the top of the façade with a laminar motion. A grid or a pierced sheet, or an aluminum profile (included in our accessories range) must be placed to allow the external air to pass in the ventilation space according to the calculations.

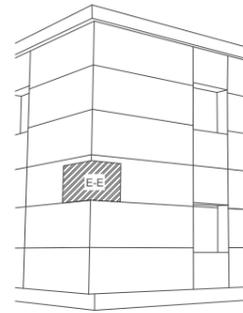


### Head Detail Section D-D

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw

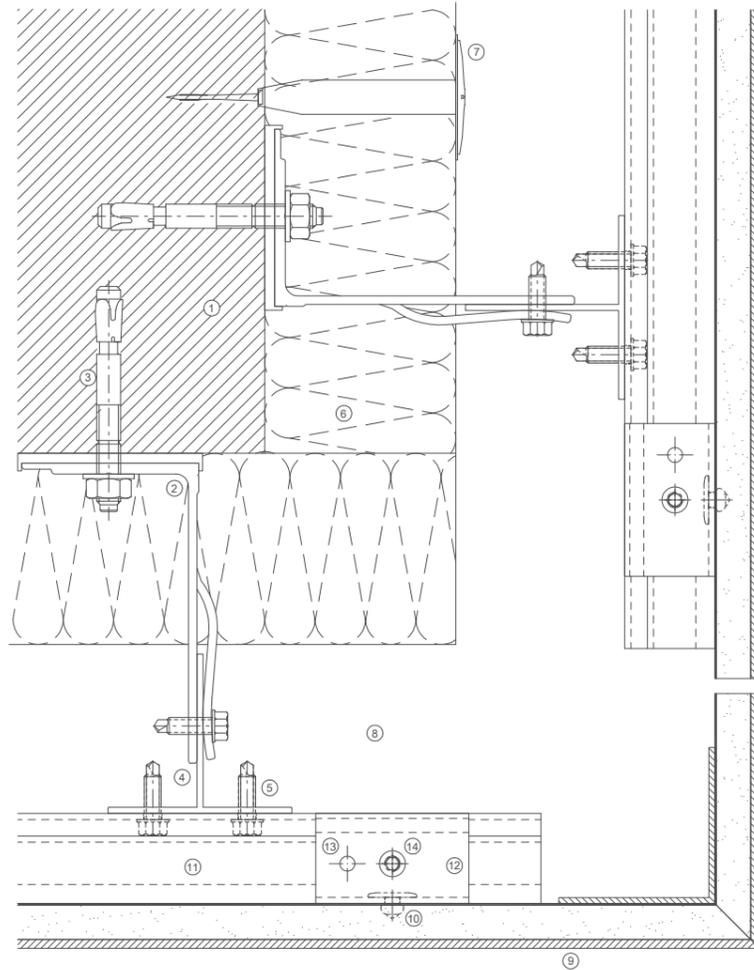


The head detail is another important point of the façade system. This is the outlet of the exhaust air coming up from the ventilation space and it must have two different roles: on the one hand, it has to protect the façade from the outside water thus granting the rain drainage, on the other hand, it has to allow the air outlet, without any air vortex or warm air stagnation.

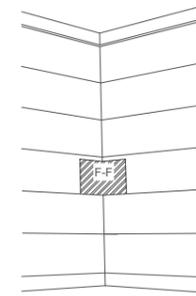


### External Corner Section E-E

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw

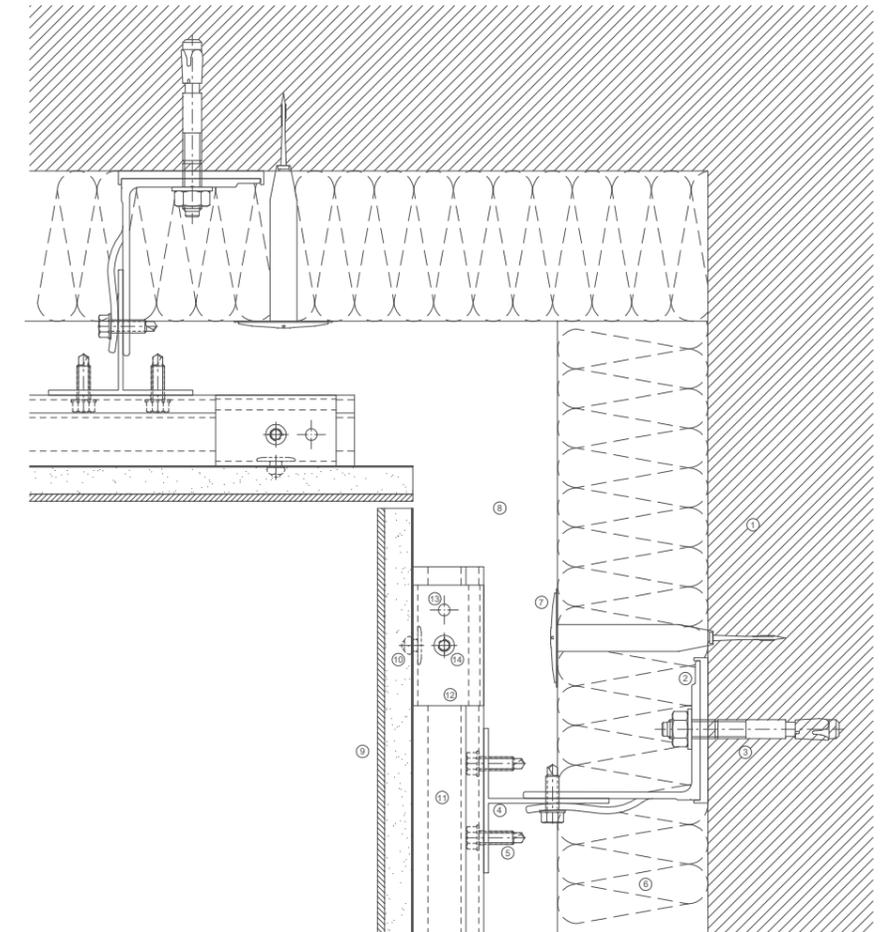


The outer corner is one of the flagships of the Gammastone AIR façade system. The panels are cut at 45 ° in the factory and can be fixed to each other with the appropriate brackets in the back stainless steel sheet to give the elements of the façade a “monolithic” appearance without vertical escape. Otherwise, one can determine the architectural joint by project and maintain it during assembly. In both cases, thanks to the locking of the panels, the stability in time of the joint is fully guaranteed.



### Internal Corner Section F-F

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw

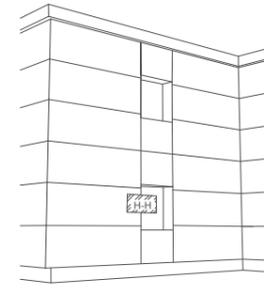
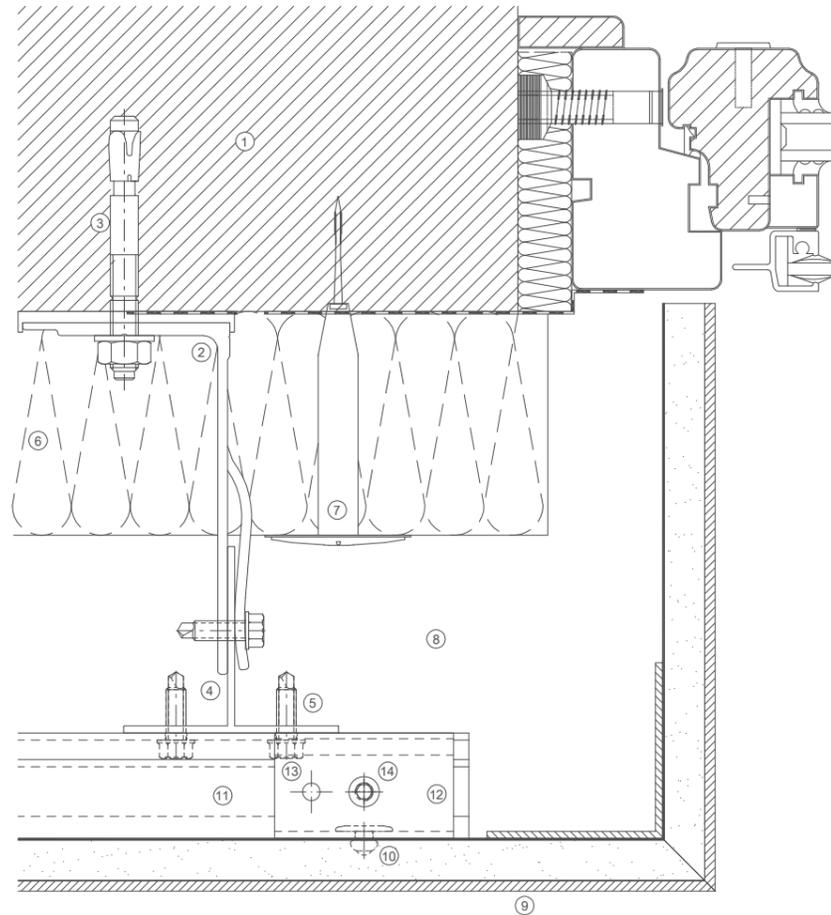


Even this detail can be designed in detail. As in the case of the outer corner, the panels are fastened to each other to ensure the duration in time of the assembly and to confer the architectural aspect that most suits the designer, starting from a 0 mm joint.



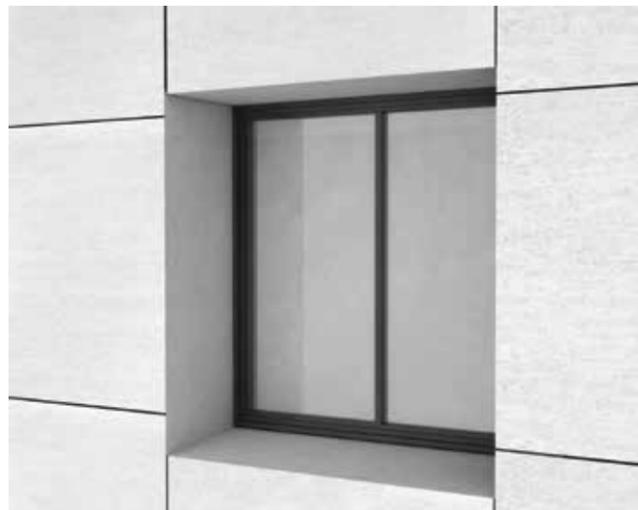
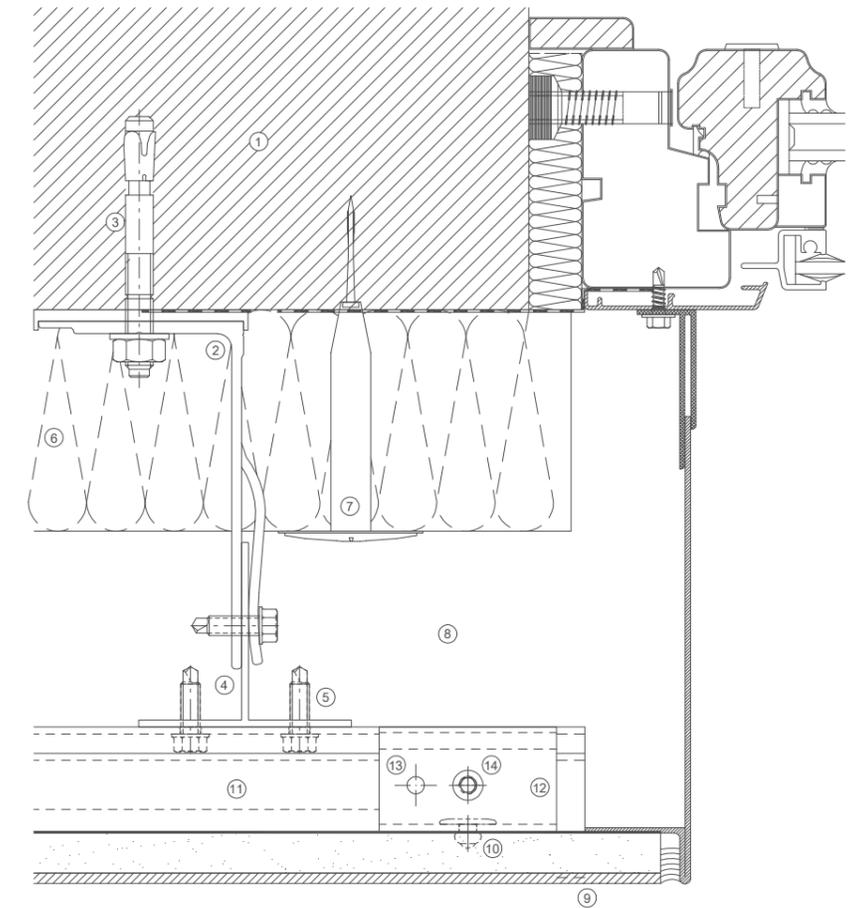
### Window Air Reveal Section G-G

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw



### Window Steel Reveal Section H-H

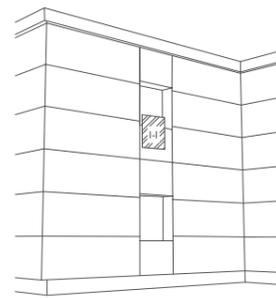
- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw



The intrados side is a detail that gives personality to the building. In the version with concealed fixing with Gammastone AIR panel, the edge at 45° is realized with extreme precision, and the panels fixed together by rear brackets. The final aspect is that of a monolithic block, solid and clean at the same time.

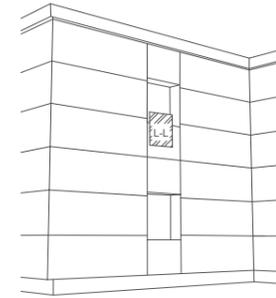
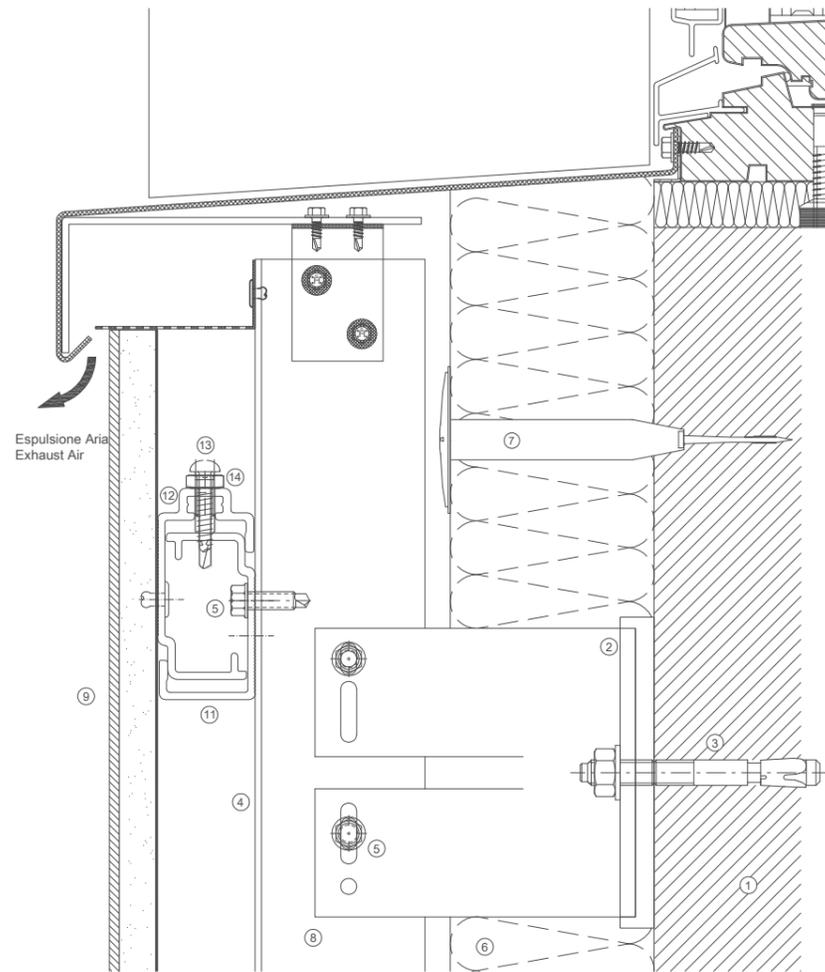


The version with intrados in metal sheet, highlights much more the presence of the windows. In this case, the technique choice involves a great accuracy in the realization of the panels, which must include the compensation profiles for expansions and manufacturing tolerances of the building.



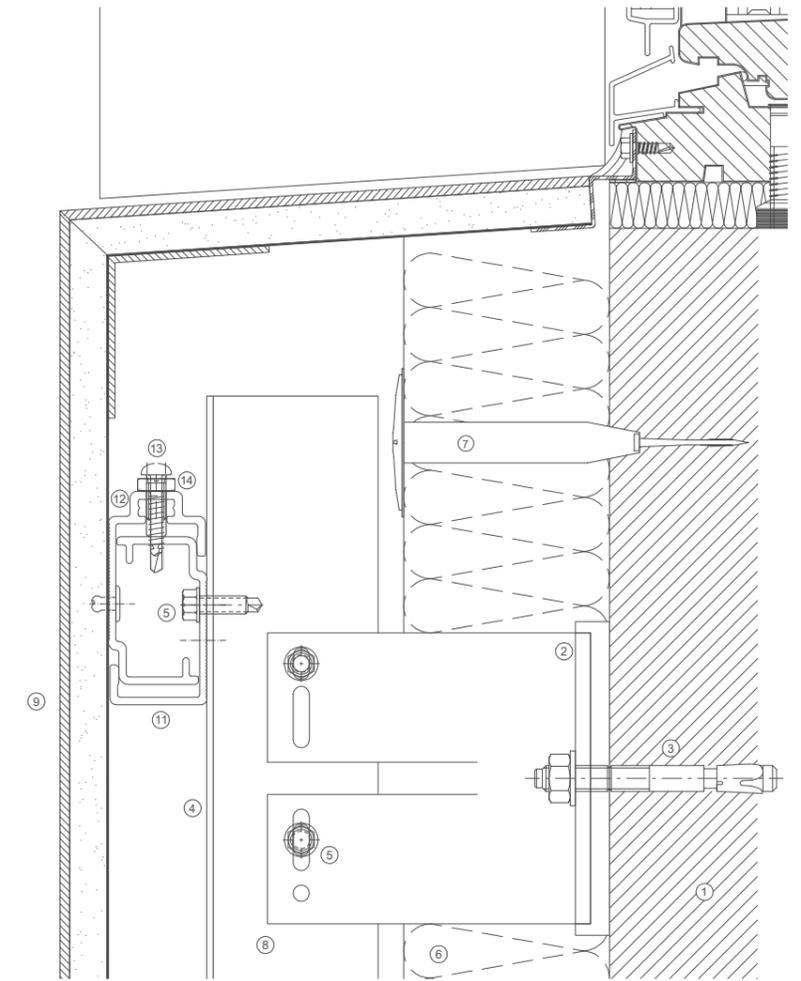
### Windows Steel Sill Section I-I

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self dril. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw

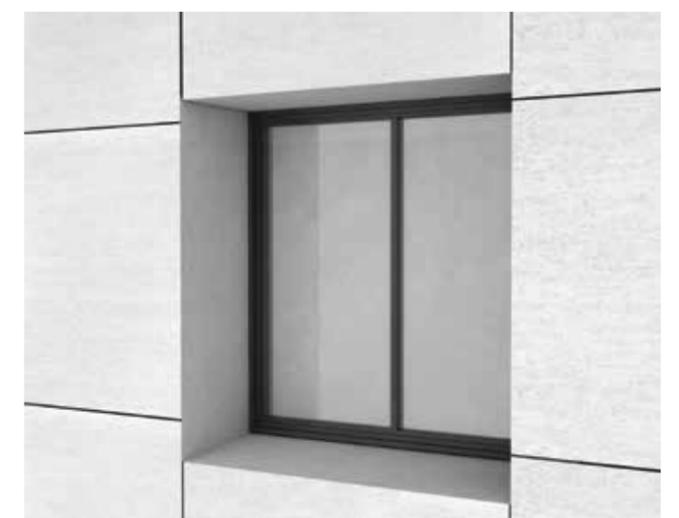


### Windows Air Sill Section L-L

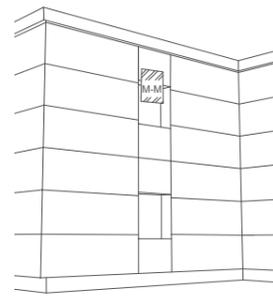
- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self dril. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. transom
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw



The metal sheet can be designed to ensure the evacuation of the ventilation air coming from the bottom, in addition to ensure the drainage of rainwater. The node must be designed so as not to allow water to enter from the outside, but at the same time to allow a convenient air expulsion.

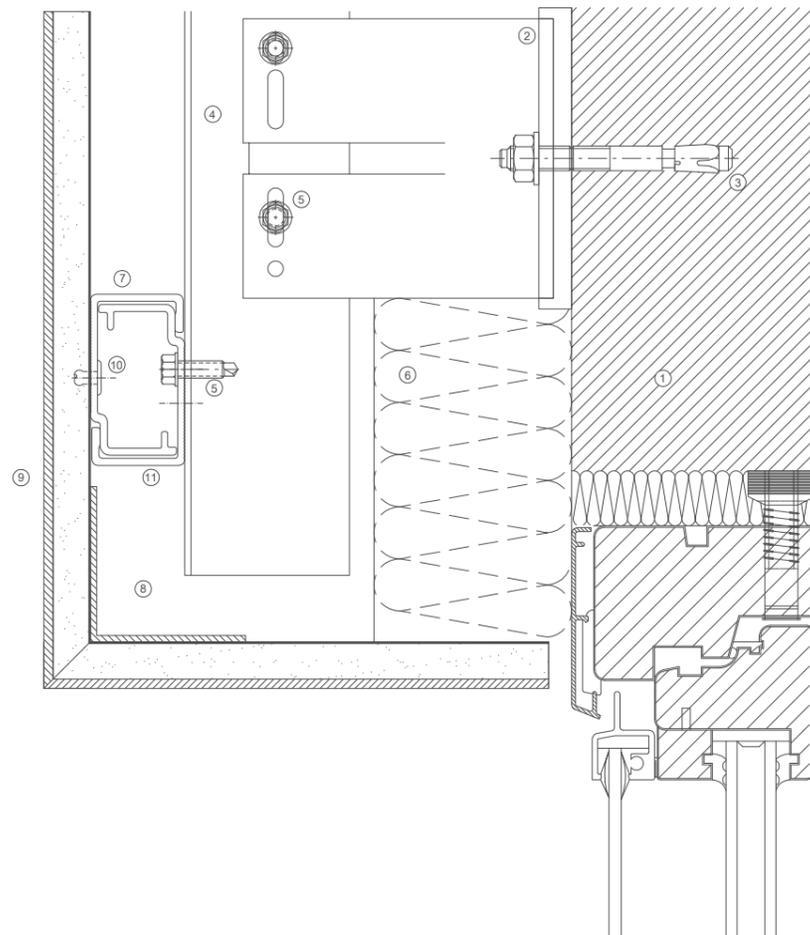


The sill plays a fundamental role in the frame of the windows, since the role of rainwater drainage is delegated to this detail. The version in Gammastone AIR imparts a monolithic appearance to the final system, and must ensure, thanks to the constructive system and seals, no infiltrations of water that can impregnate the insulation.



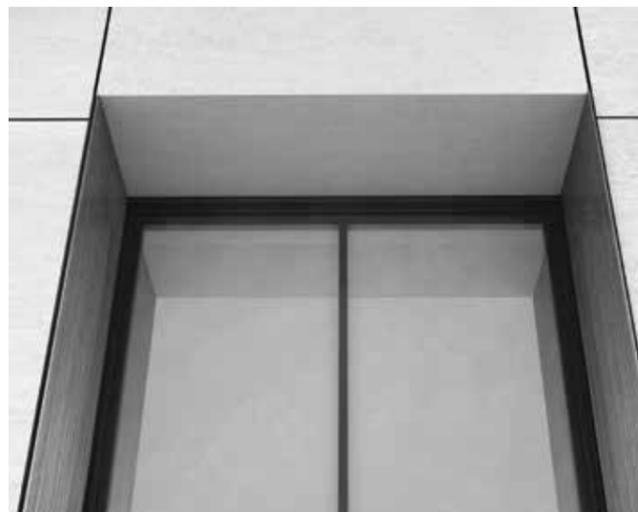
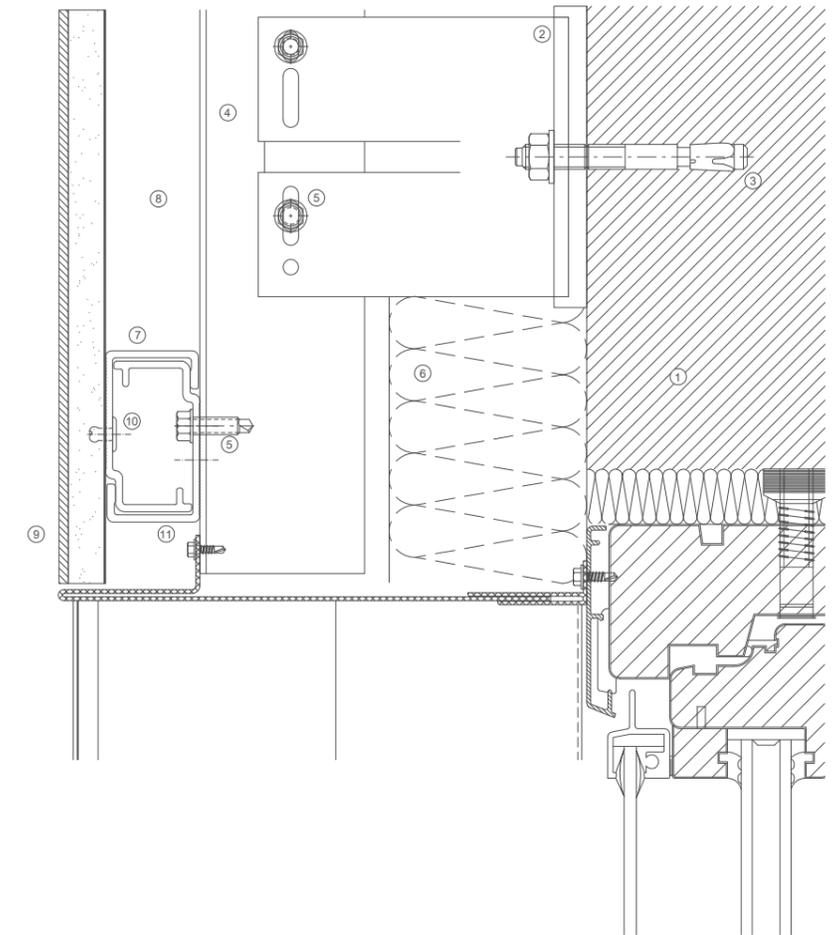
### Windows Air Ceiling Section M-M

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Paint. Rivet



### Windows Steel Ceiling Section N-N

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Paint. Rivet



The ceiling plays a decisive role, both from the architectural and fluid dynamic point of view. In addition to being a part of the window frame, it is the other main entry point for the outside air. It is possible to achieve this effect even with the version made with panels Gammastone AIR.



The ceiling made of metal sheet has an important architectural impact on the building. To ensure proper functioning of the thermal/fluid dynamic machine that is a ventilated façade. The sheet must be perforated so as to allow the entrance of the external air in agreement with the calculations.

# CURTAIN WALL

## Thermal resistance and thermal insulation

GammaStone AIR panel lends can be used perfectly as the infilling element in curtain walls, both with mechanical retention and structural one. Regardless of the technology used for the structure of the curtain wall (**mullion or transom, independent cells, or more traditional windows**), GammaStone AIR panels can be used as infill ensuring **the highest value in external finish**. It also provides the best protection from flames coming from the inside of the building thanks to the steel sheet on the back of the panel itself. In this way, **the fulfilling is completely incombustible from flame coming from the inside or the outside the building**. The rear stainless steel sheet is also perfectly compatible with the normal structural silicone (mono and bi-component) used in window frames for structural bonding of the glass and sheet metal panels. Therefore, GammaStone AIR can be pasted structurally on the façade grid, after ordinary checks required by current regulations and from international technical guidelines (For. Ex. ETAG002 - GUIDELINE FOR EUROPEAN TECHNICAL APPROVAL FOR STRUCTURAL SEALANT GLAZING SYSTEMS (SSGS)).

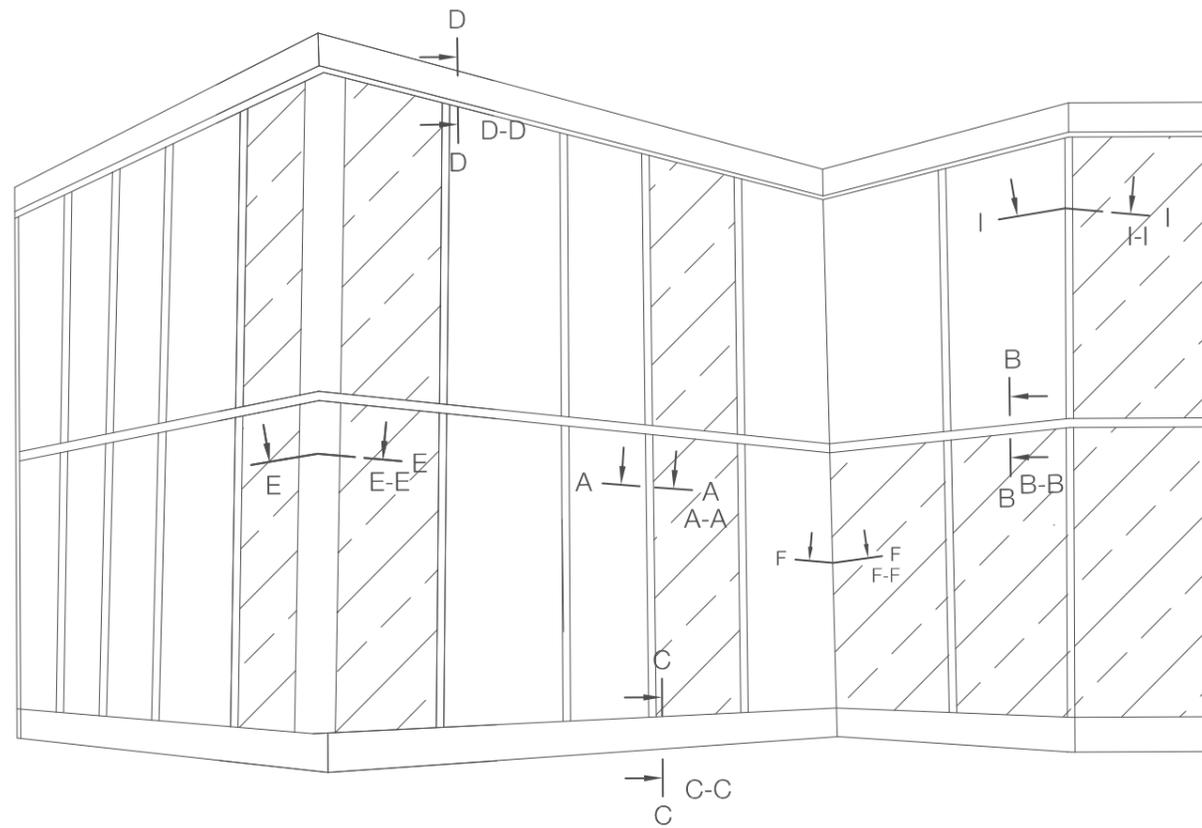
According to the UNI EN 12664, the curtain wall solution GammaStone AIR guarantees a thermal resistance  $U$  (W/m<sup>2</sup>K) 0,5, contributing to the thermal insulation of the building despite the minimal thickness and the high aesthetic value.



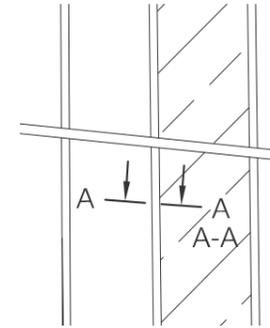
# TECHNICAL DRAW

## typical details

### Curtain Wall - Invisible Solution

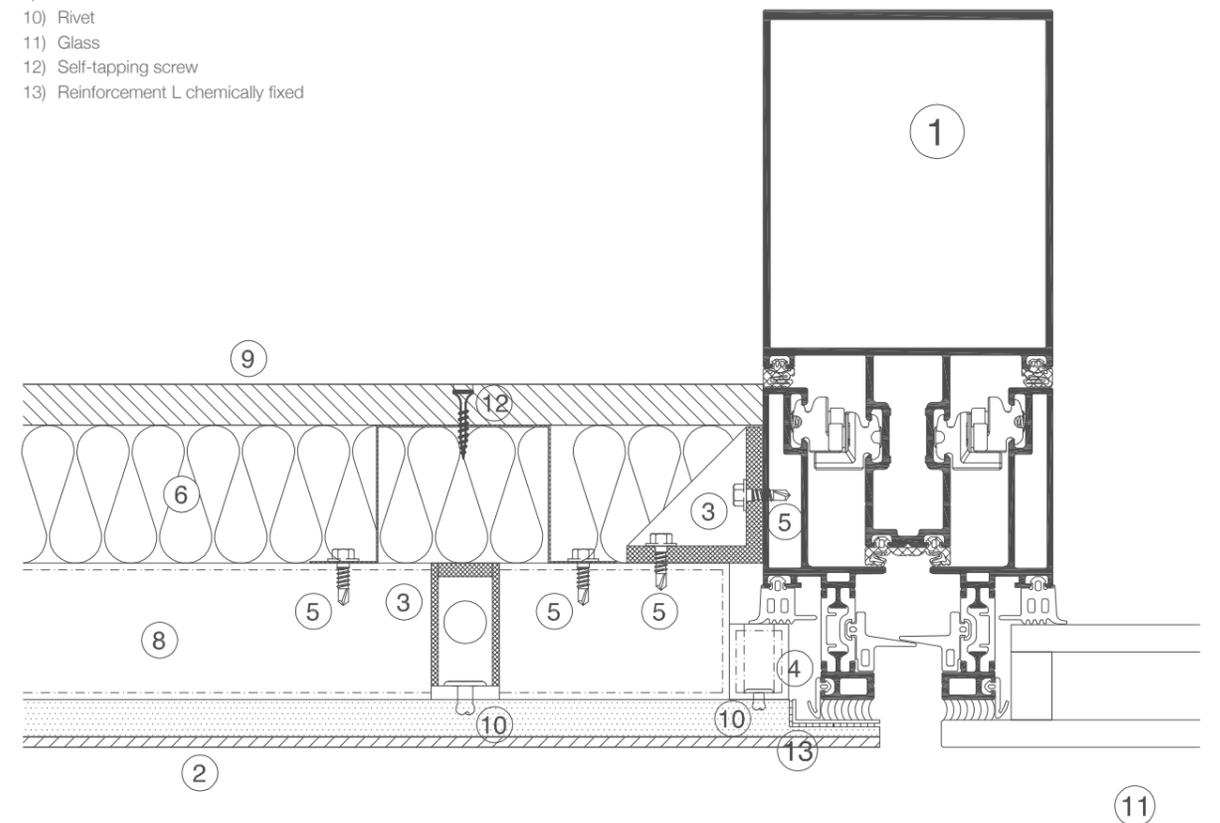


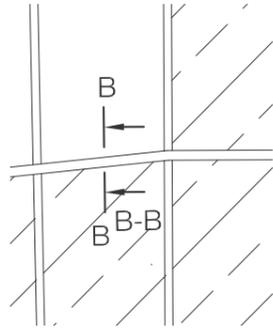
- C.S. A-A Horizontal Section
- C.S. B-B Vertical Section
- C.S. C-C Base Detail
- C.S. D-D Head Detail
- C.S. E-E External Corner
- C.S. F-F Internal Corner
- C.S. I-I Internal Corner Variable



### Horizontal Cross Section A-A

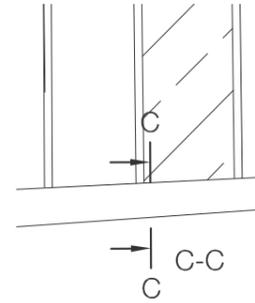
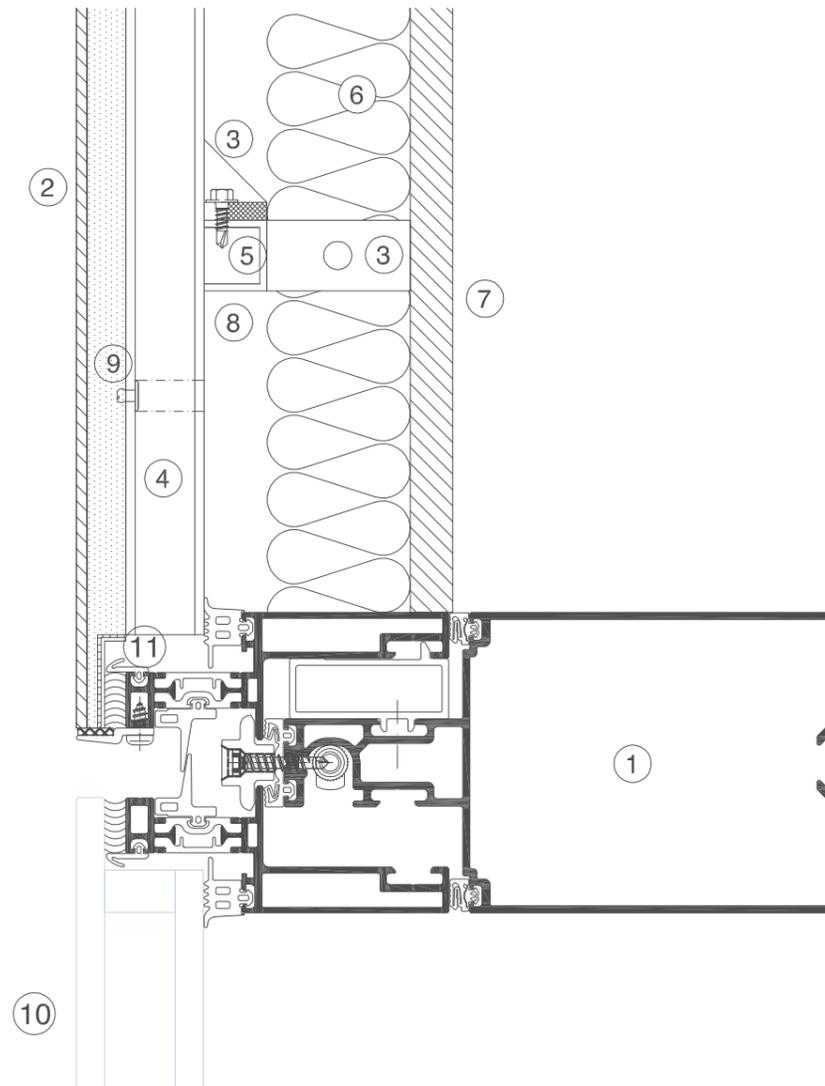
- 1) Mullion
- 2) Gammastone AIR
- 3) Mounting bracket
- 4) Shimming profile
- 5) Self drill. Screw
- 6) Insulation
- 7) Omega profile
- 8) Stiffening profile
- 9) Plasterboard
- 10) Rivet
- 11) Glass
- 12) Self-tapping screw
- 13) Reinforcement L chemically fixed





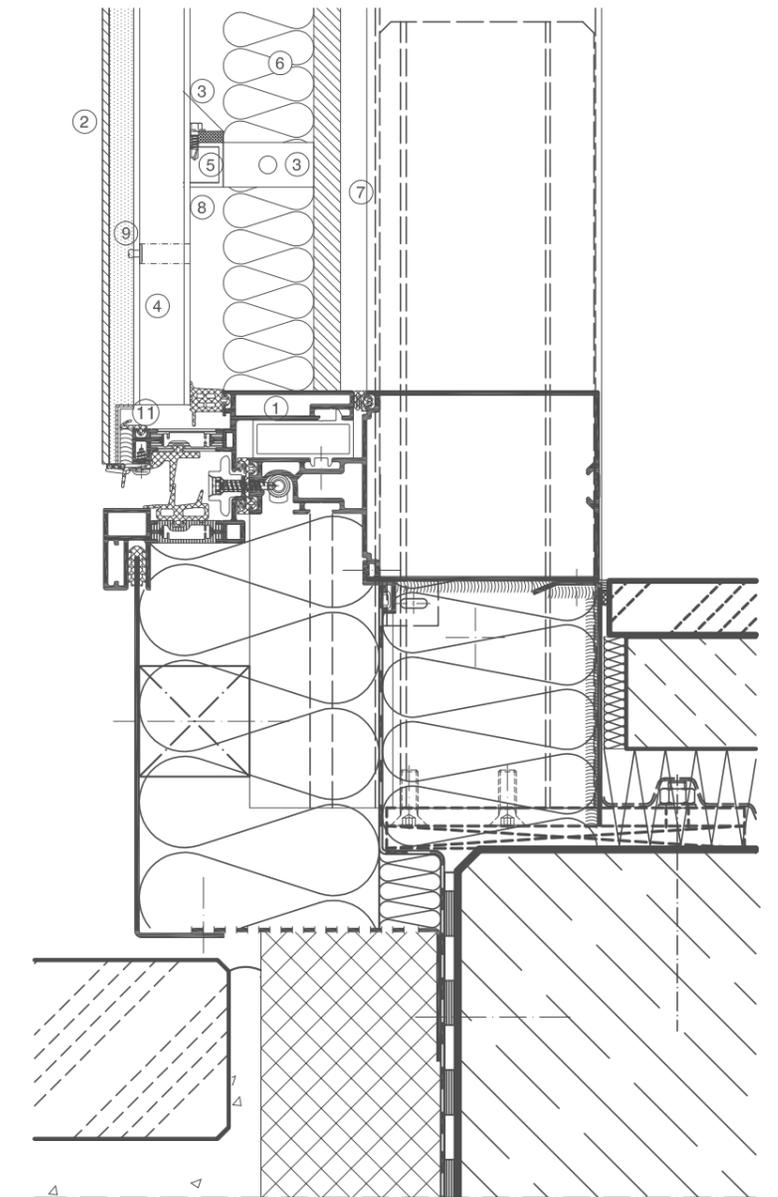
**Vertical Cross**  
**Section B-B**

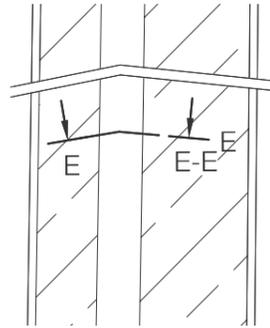
- 1) Transom
- 2) Gammastone AIR
- 3) Mounting bracket
- 4) Shimming profile
- 5) Self drill. Screw
- 6) Insulation
- 7) Plasterboard
- 8) Stiffening profile
- 9) Rivet
- 10) Glass
- 11) Reinforcement L chemically fixed



**Base Detail**  
**Section C-C**

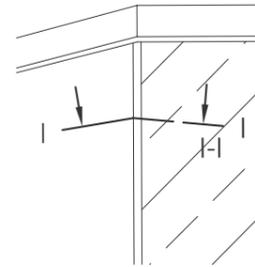
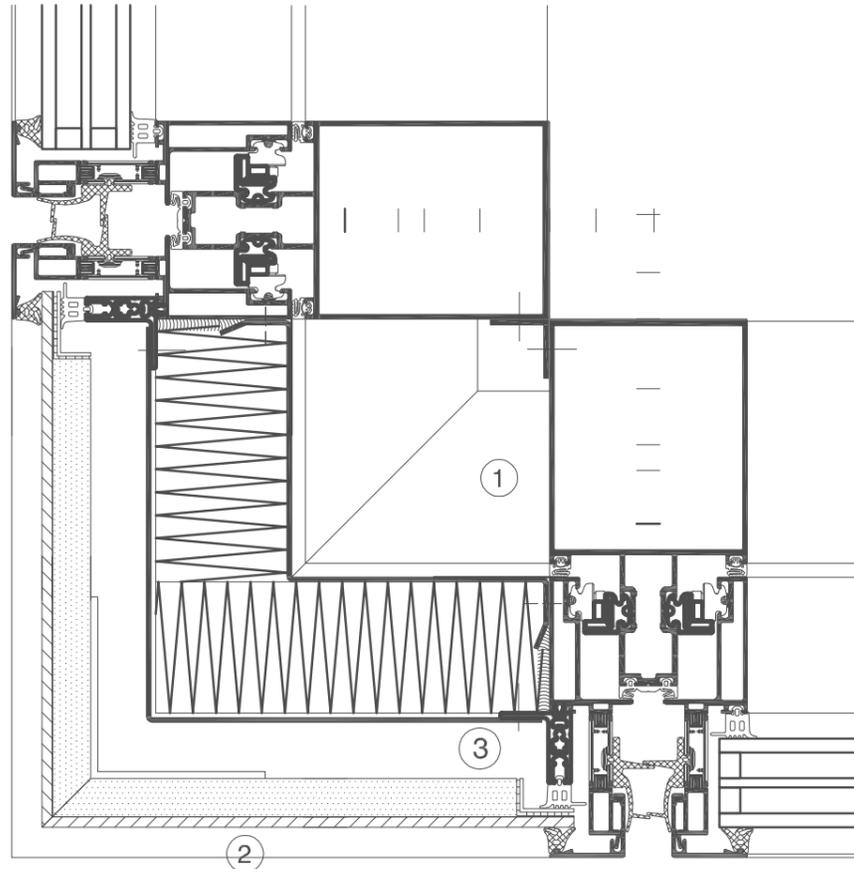
- 1) Transom
- 2) Gammastone AIR
- 3) Mounting bracket
- 4) Shimming profile
- 5) Self drill. Screw
- 6) Insulation
- 7) Plasterboard
- 8) Stiffening profile
- 9) Fissaggio meccanico / Rivet
- 10) Glass
- 11) Reinforcement L chemically fixed





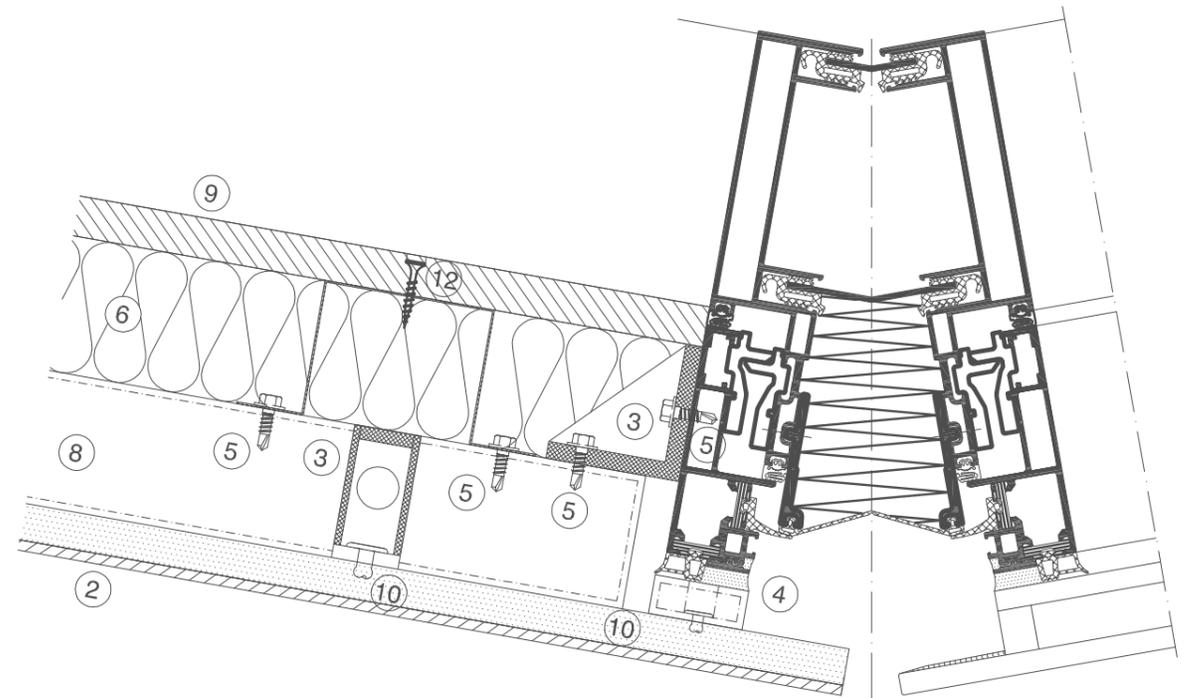
**External Corner**  
Section E-E

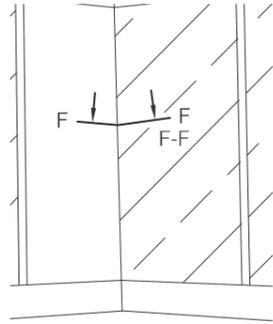
- 1) Mullion
- 2) Gammastone AIR
- 3) Reinforcement L chemically fixed



**Variable External Corner**  
Section I-I

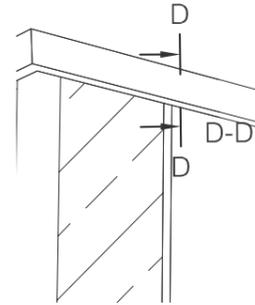
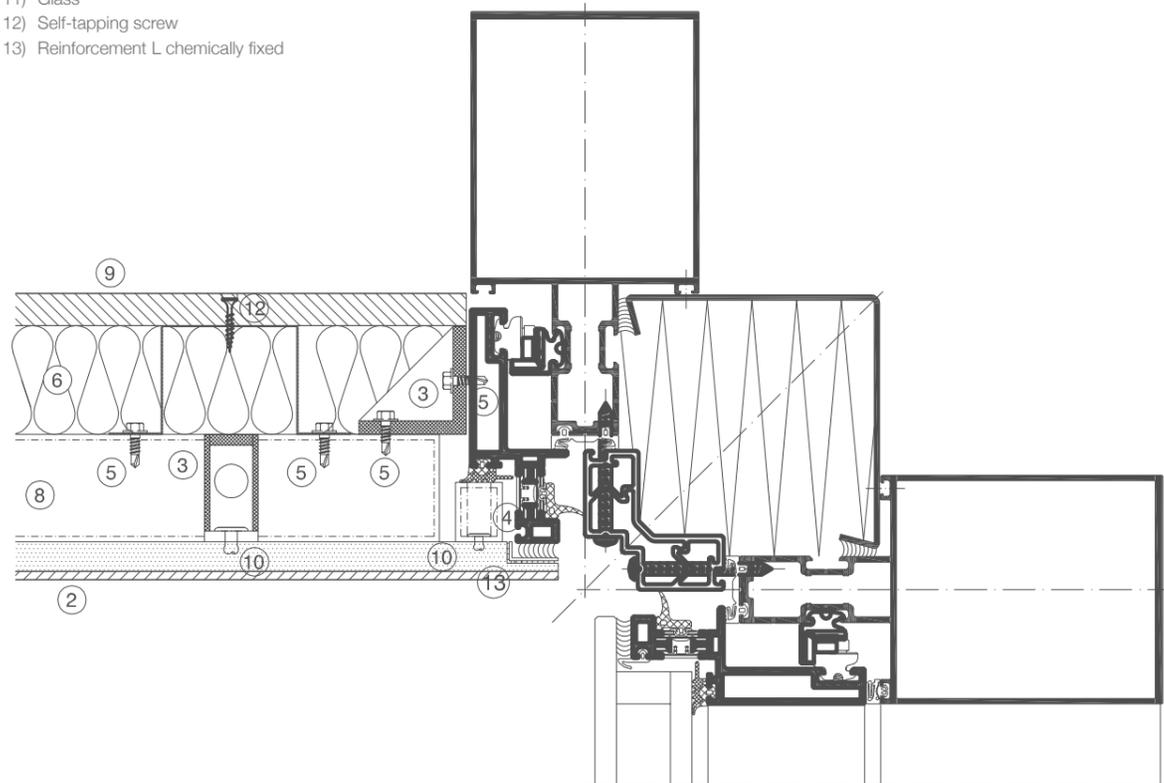
- 1) Mullion
- 2) Gammastone AIR
- 3) Mounting bracket
- 4) Shimming profile
- 5) Self drill. Screw
- 6) Insulation
- 7) Omega profile
- 8) Stiffening profile
- 9) Plasterboard
- 10) Rivet
- 11) Glass
- 12) Self-tapping screw





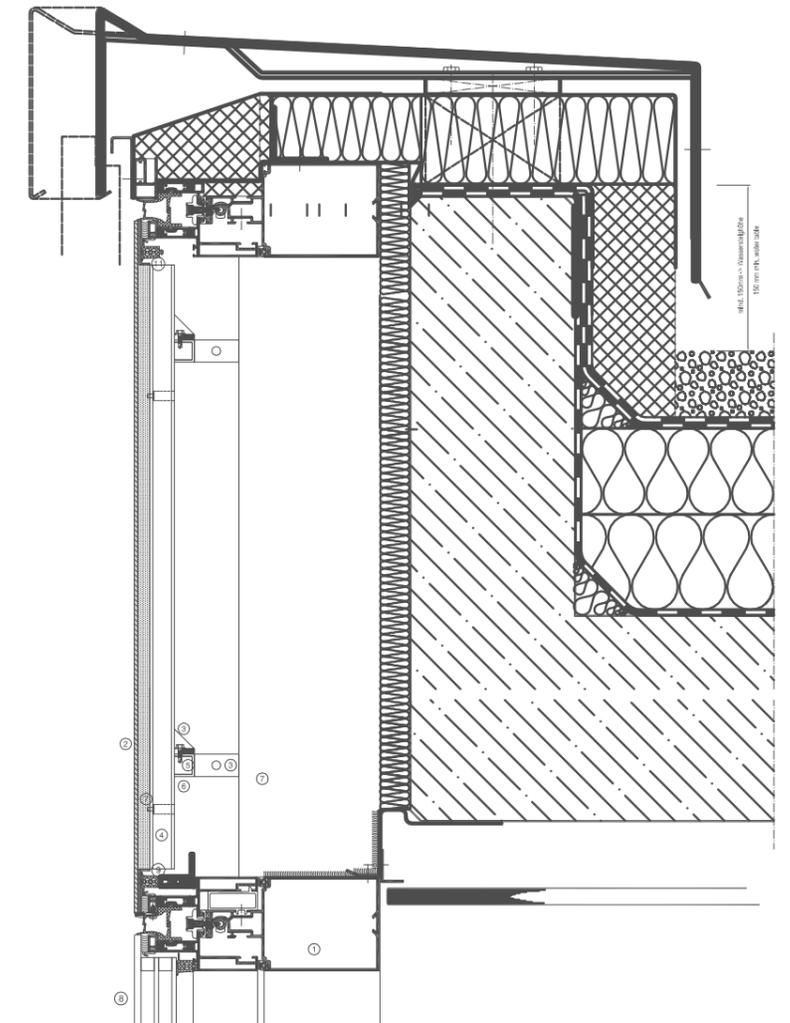
**Internal Corner**  
**Section F-F**

- 1) Mullion
- 2) Gammastone AIR
- 3) Mounting bracket
- 4) Shimming profile
- 5) Self drill. Screw
- 6) Insulation
- 7) Omega profile
- 8) Stiffening profile
- 9) Plasterboard
- 10) Rivet
- 11) Glass
- 12) Self-tapping screw
- 13) Reinforcement L chemically fixed



**Head Detail**  
**Section D-D**

- 1) Transom
- 2) Gammastone AIR
- 3) Mounting bracket
- 4) Shimming profile
- 5) Self drill. Screw
- 6) Insulation
- 7) Plasterboard
- 8) Stiffening profile
- 9) Rivet
- 10) Glass
- 11) Reinforcement L chemically fixed



**BANCA  
REALE**

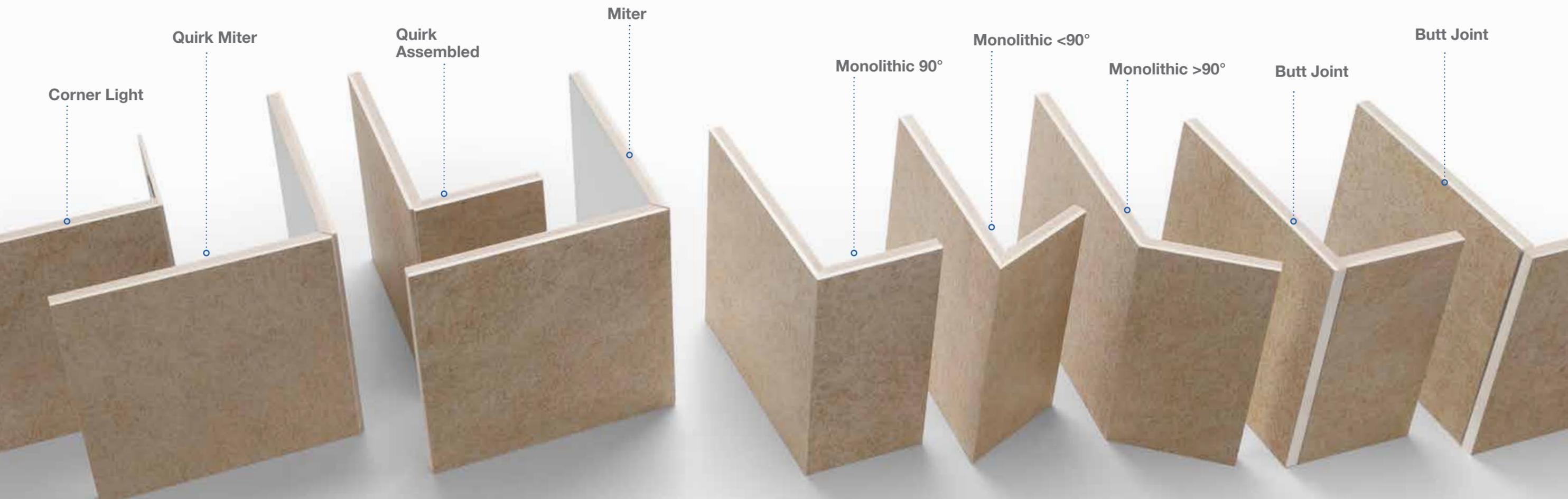
# TYPES OF CORNERS

## Edges in various angles

The monolithic corners are produced with the most difficult and complicated angles to satisfy any architectural request needed in the project. They are made in our laboratories and give uniqueness to every project signed by GAMMASTONE, synonymous with excellence and elegance. Our long experience guarantees corners fabricated respecting the highest finishing standards. Imagine any material whose joint is almost invisible, in a way that the edges of some natural materials seem bent and not joined. The attention

to detail, the finishing of the materials, the leading technology and the uniqueness of the projects are the distinctive features of the high quality guaranteed by the company. GammaStone, an Italian company, leader in the design of ventilated façades, blends its experience on an intelligent and valuable product, unique in the world for design, innovation and technology. The advanced technology of software and machineries that fabricate each component, from the simplest to the most complex, together with the skillful and careful craftsmanship that assembles them, guarantee a production of high-quality value.

GammaStone boasts a unique technology obtained by years of experience and improvement, collected in a series of patents and certifications.

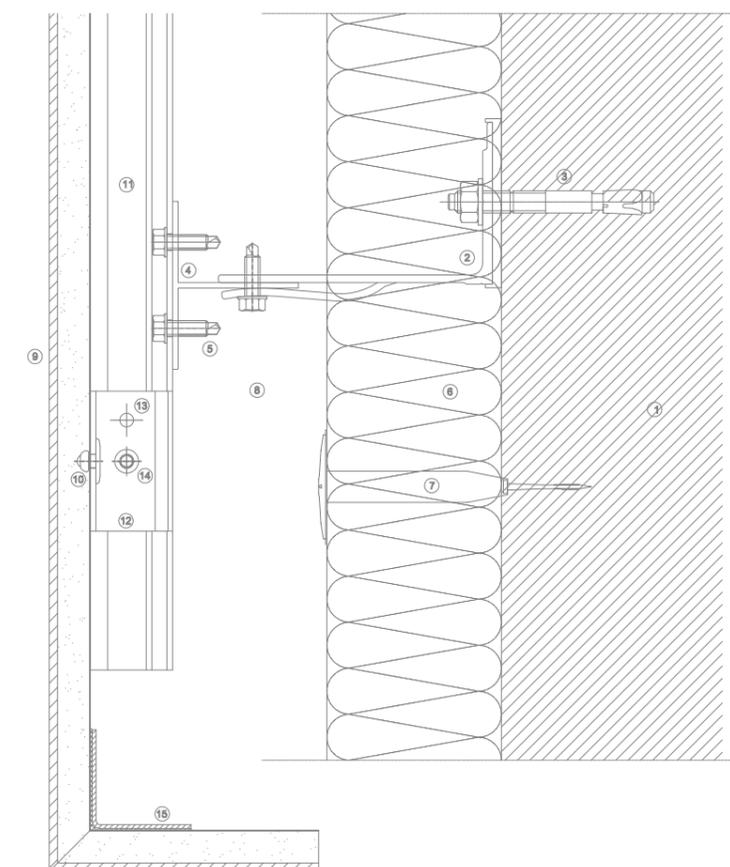


# MONOLITHIC 90°



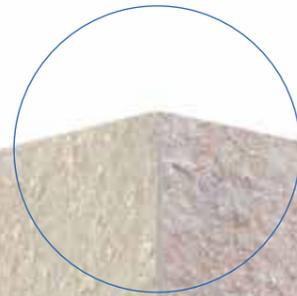
## Monolithic 90°

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw
- 15) Angle



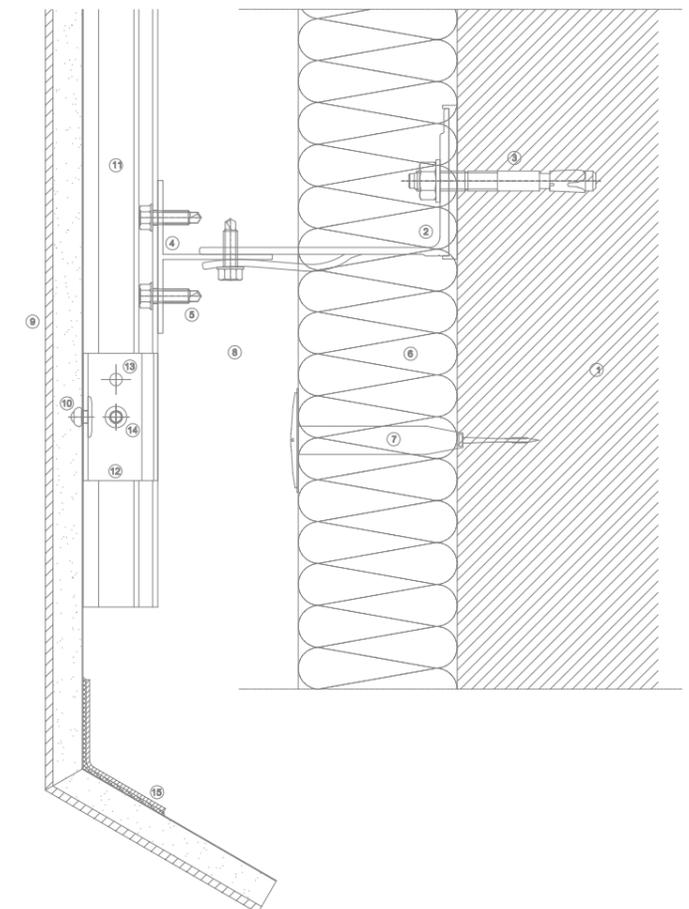
# MONOLITHIC

## >90°



### Monolithic >90°

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw
- 15) Angle



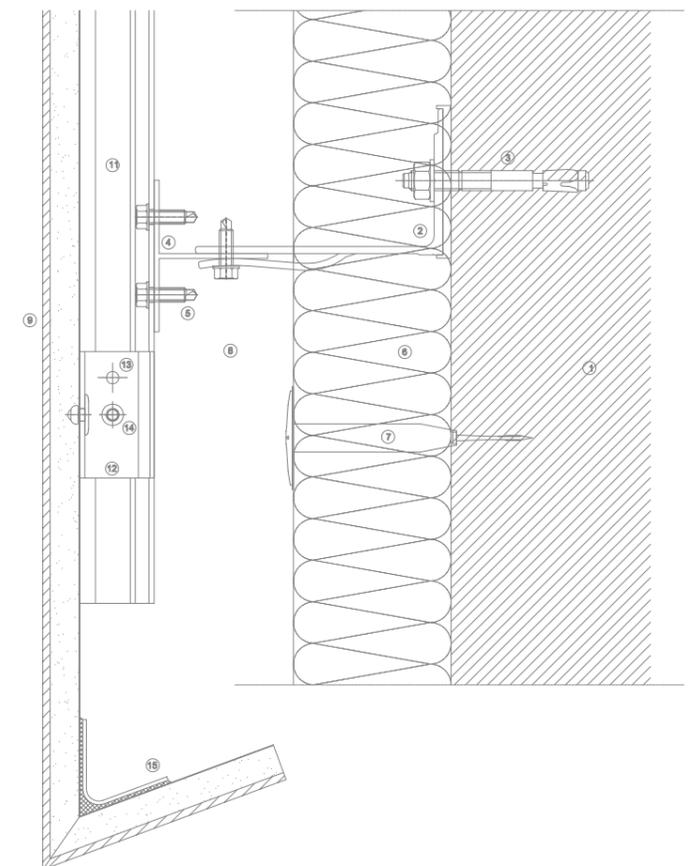
# MONOLITHIC

## <90°

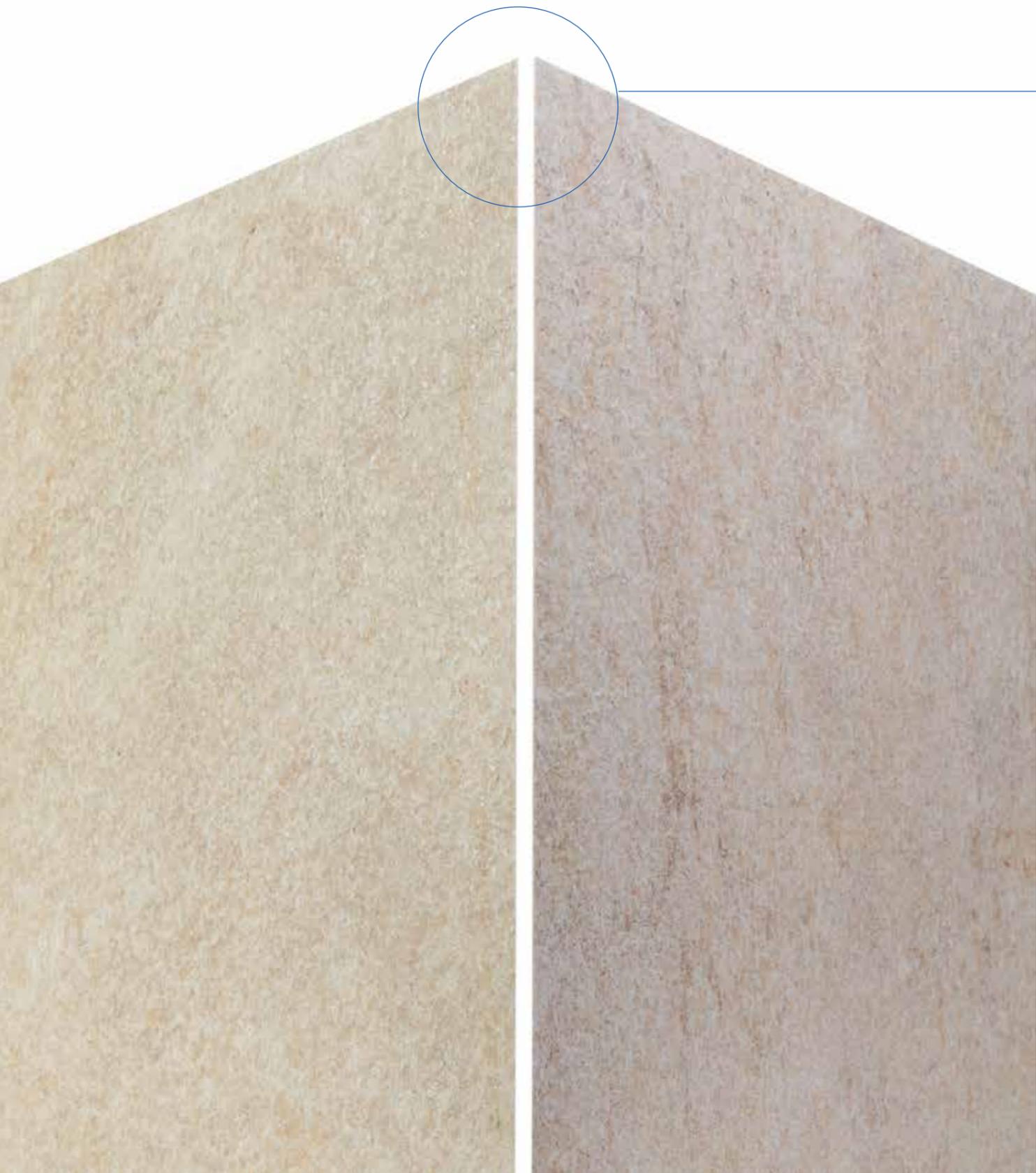


### Monolithic <90°

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw
- 15) Angle

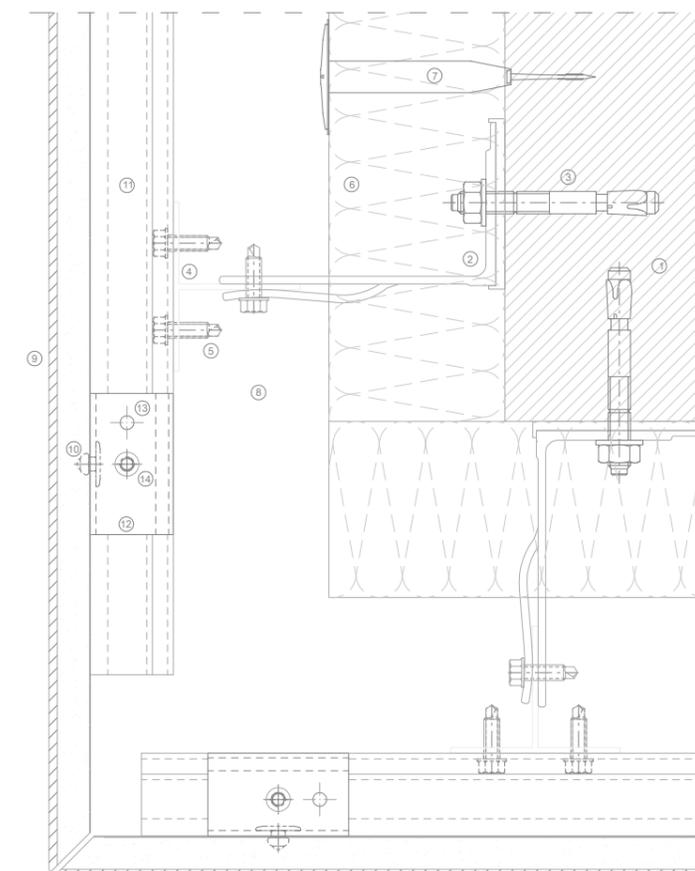


# MITER



## Miter

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw
- 15) Stainless steel or aluminium terminal
- 16) Angle

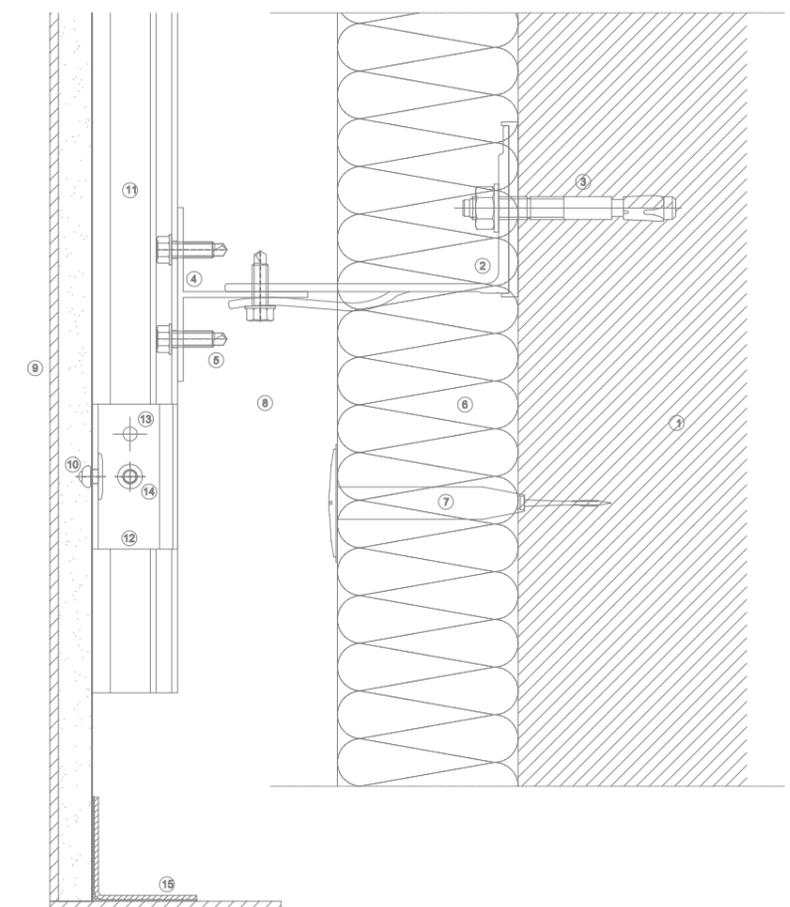


# CORNER LIGHT



## Corner Light

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw
- 15) Angle

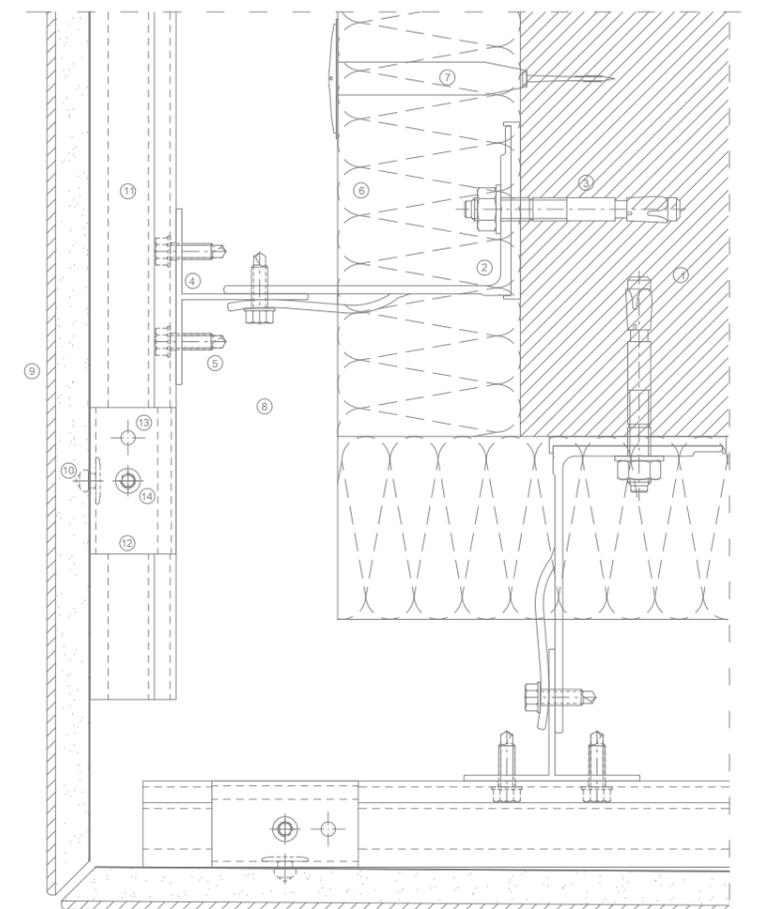


# QUIRK MITER

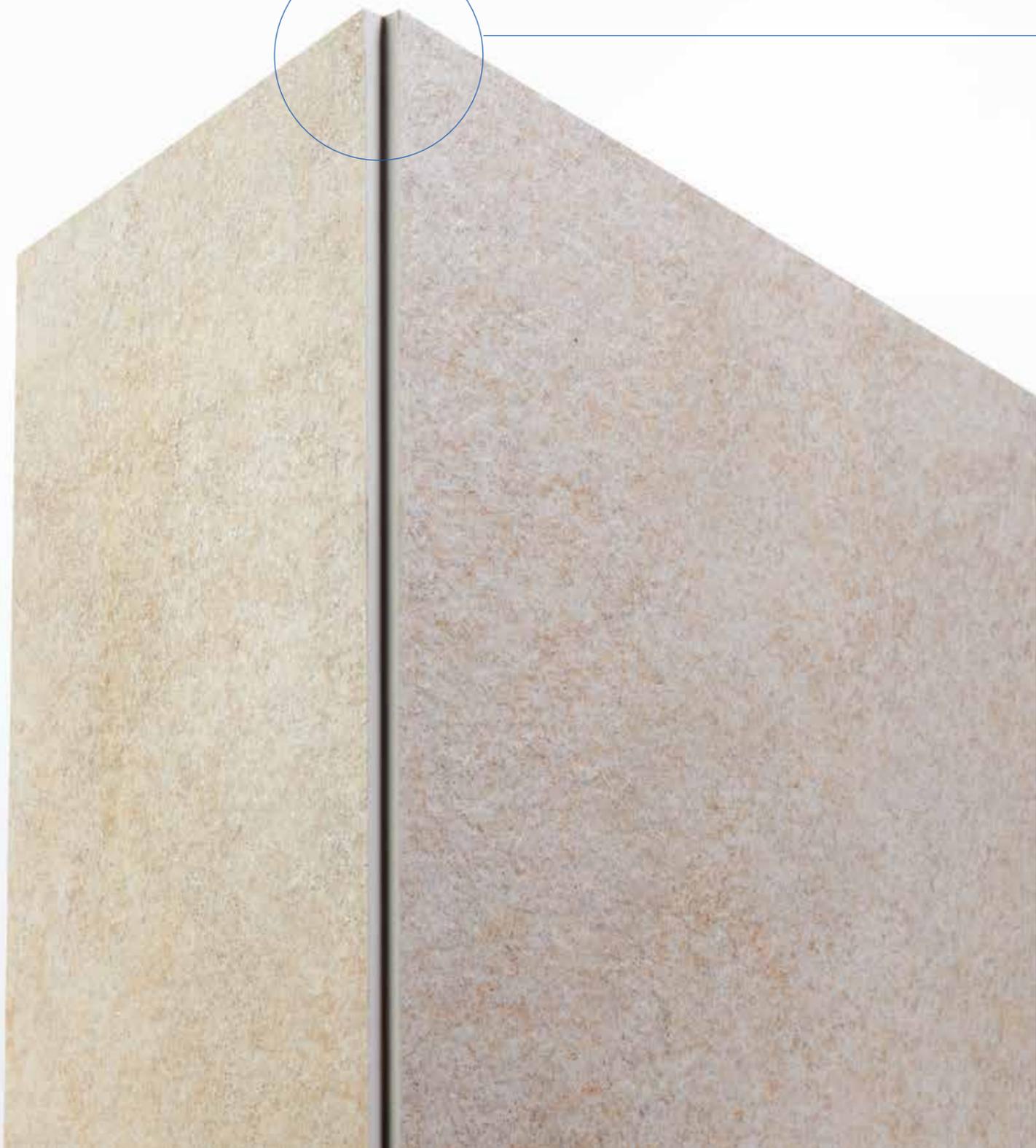
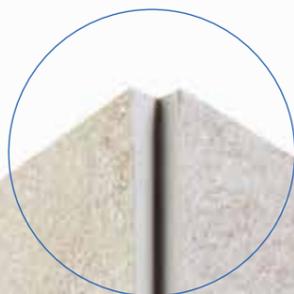


## Quirk Miter

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw

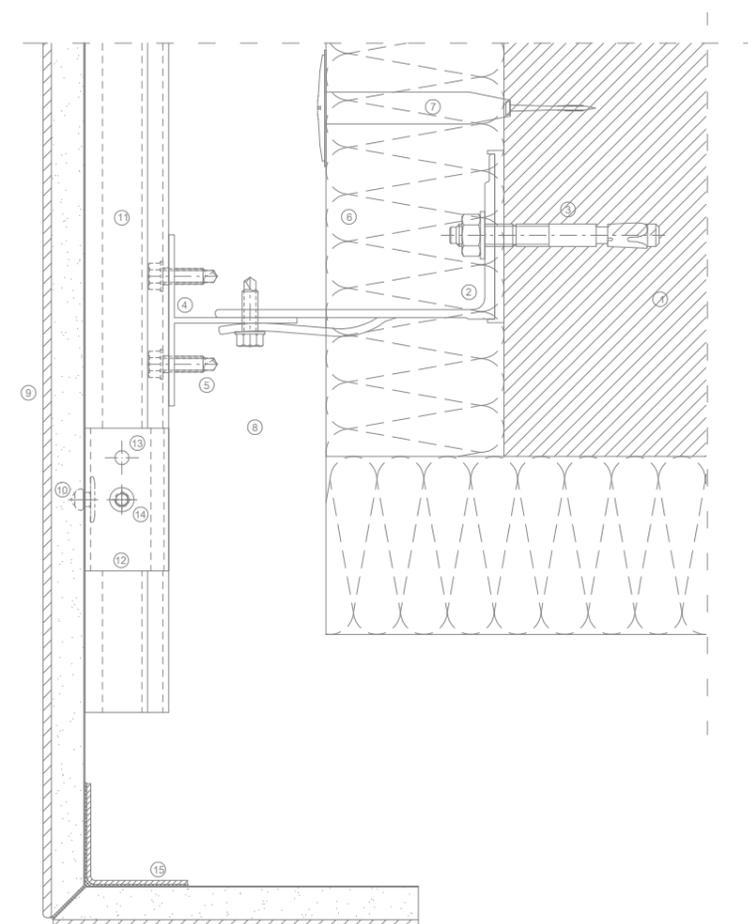


# QUIRK ASSEMBLED

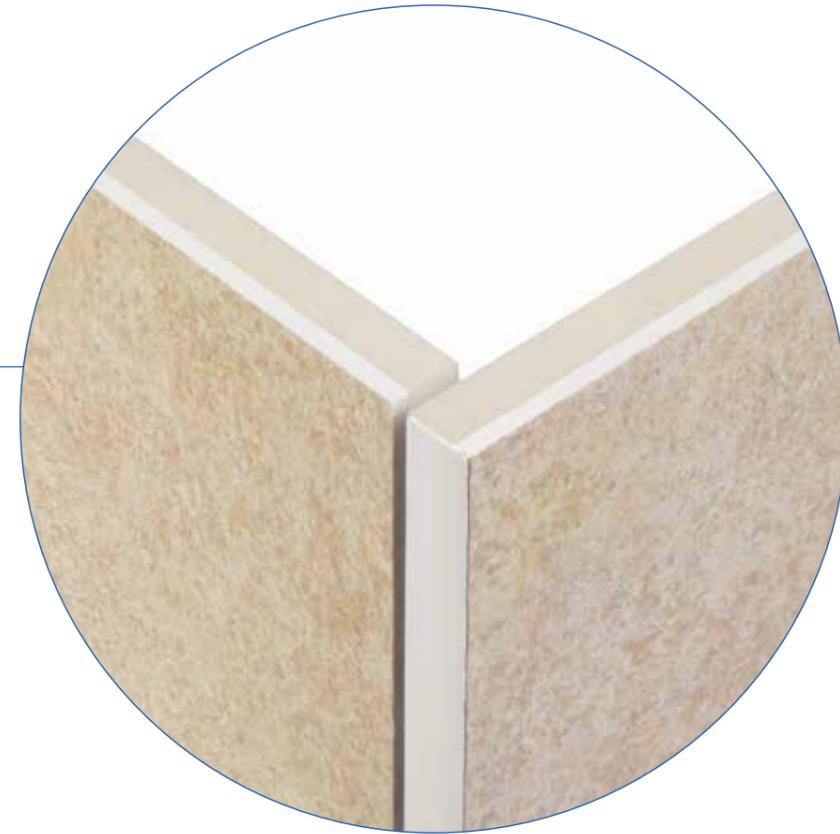


## Quirk Assembled

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw
- 15) Angle

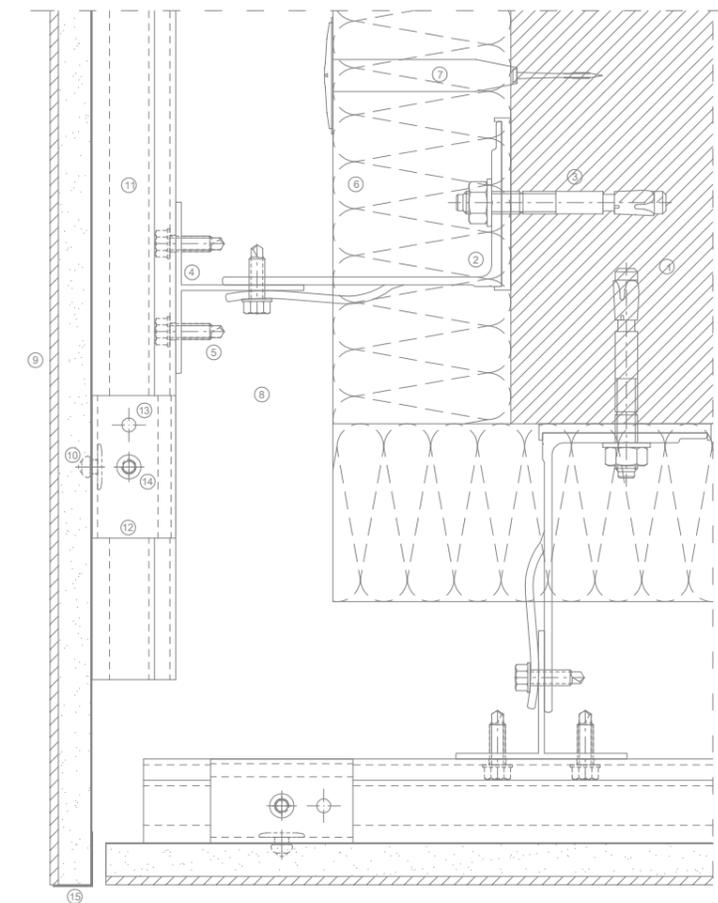


# BUTT JOINT



## Butt Joint

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw
- 15) Stainless steel or aluminium terminal

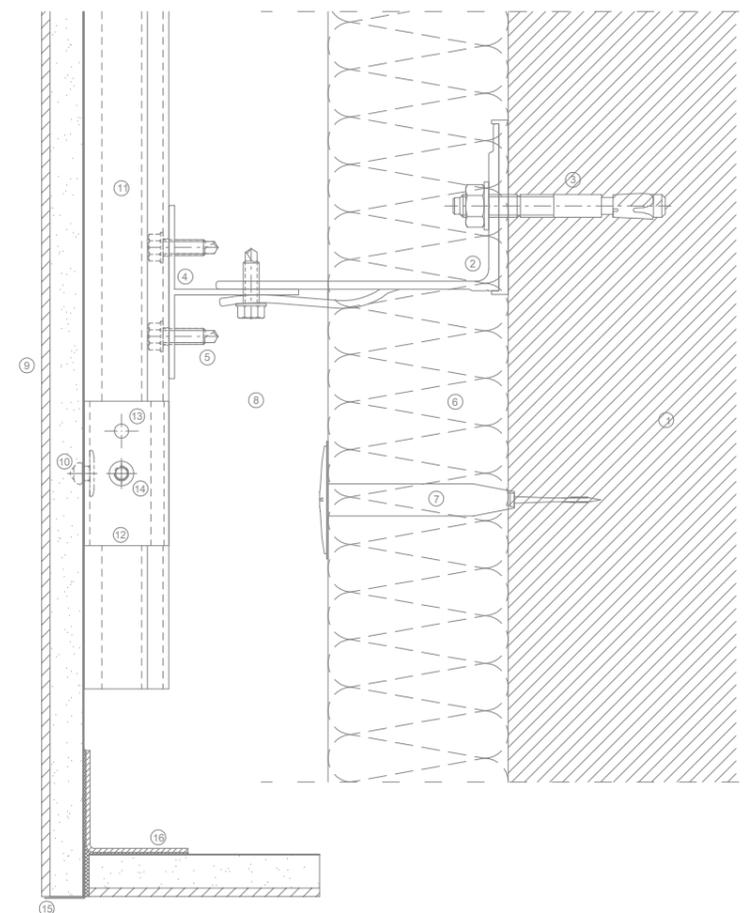


# BUTT JOINT



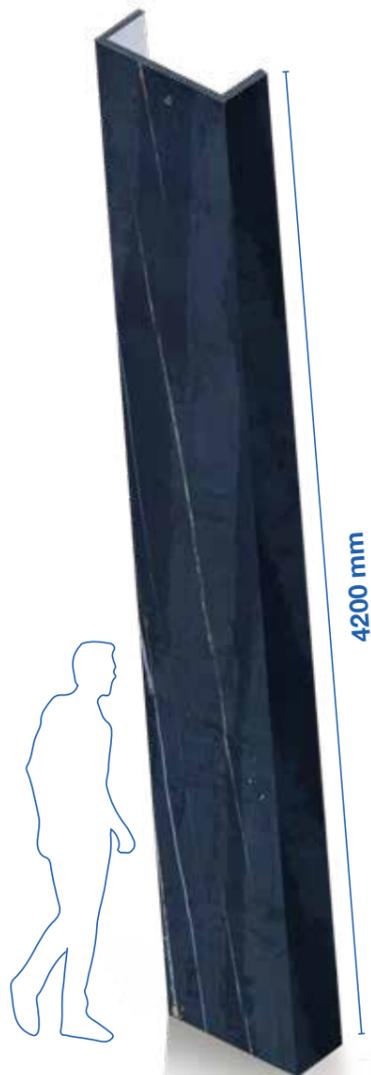
## Butt Joint

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw
- 15) Stainless steel or aluminium terminal



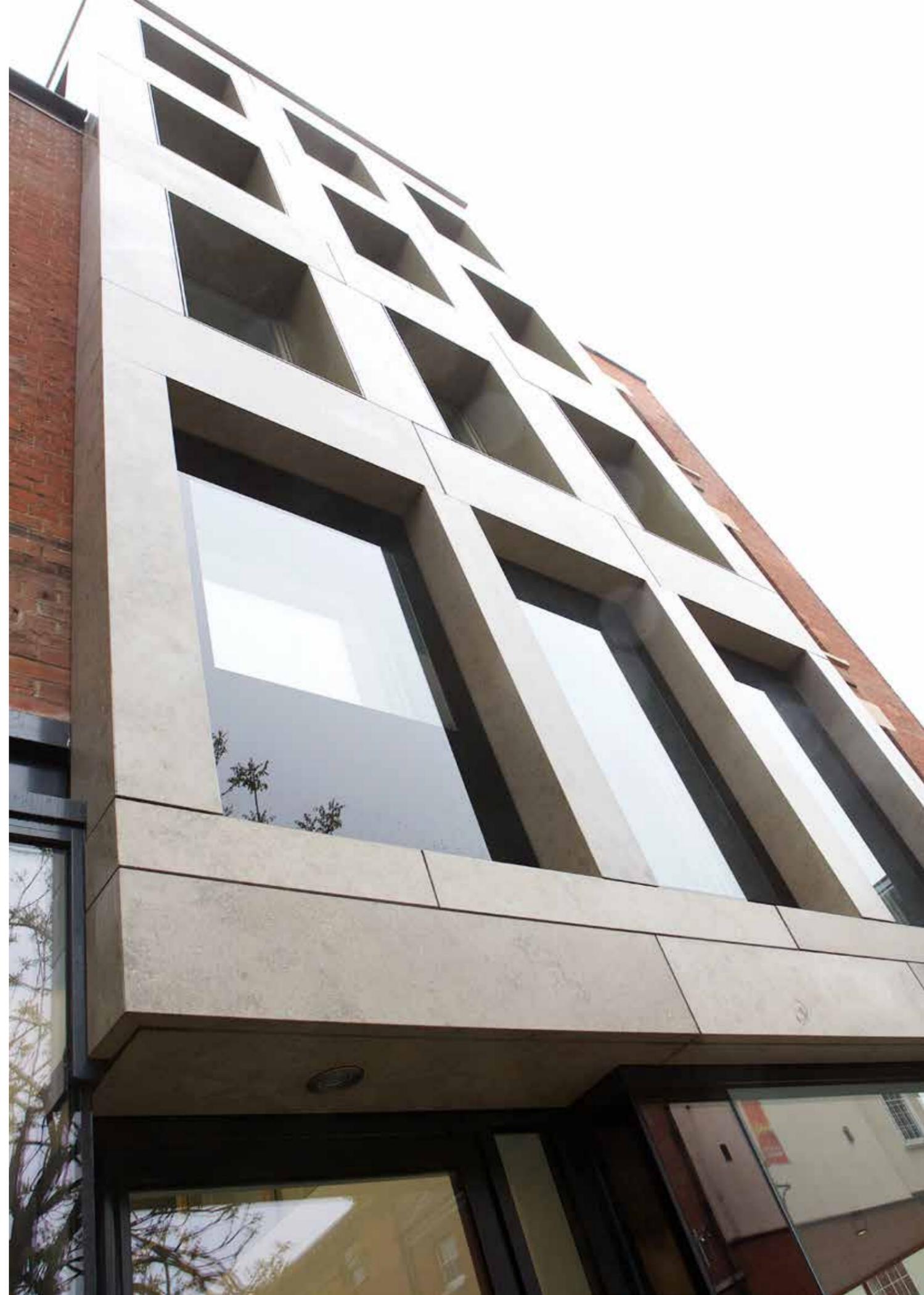
# COLUMNS AND STRINGCOURSES

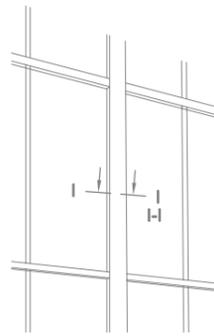
are produced in our laboratories



The columns are structural and decorative elements that, at the same time, enhance the external as well as the internal spaces. GammaStone produces monolithic columns and stringcourses of large dimensions already assembled and ready to be installed with perfect finishes. Monolithic columns for beams, pillars, etc. allow a high engineering of the product for example the systems can be positioned inside the elements themselves. The stringcourses used to decorate horizontally a level of the covering or the entire façade, are produced in our laboratories. The stringcourse is also used in ventilated façades and is a decorative element that can be easily combined in countless variations.

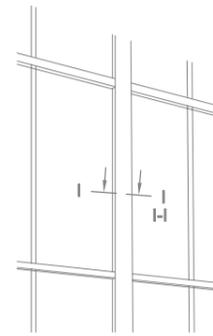
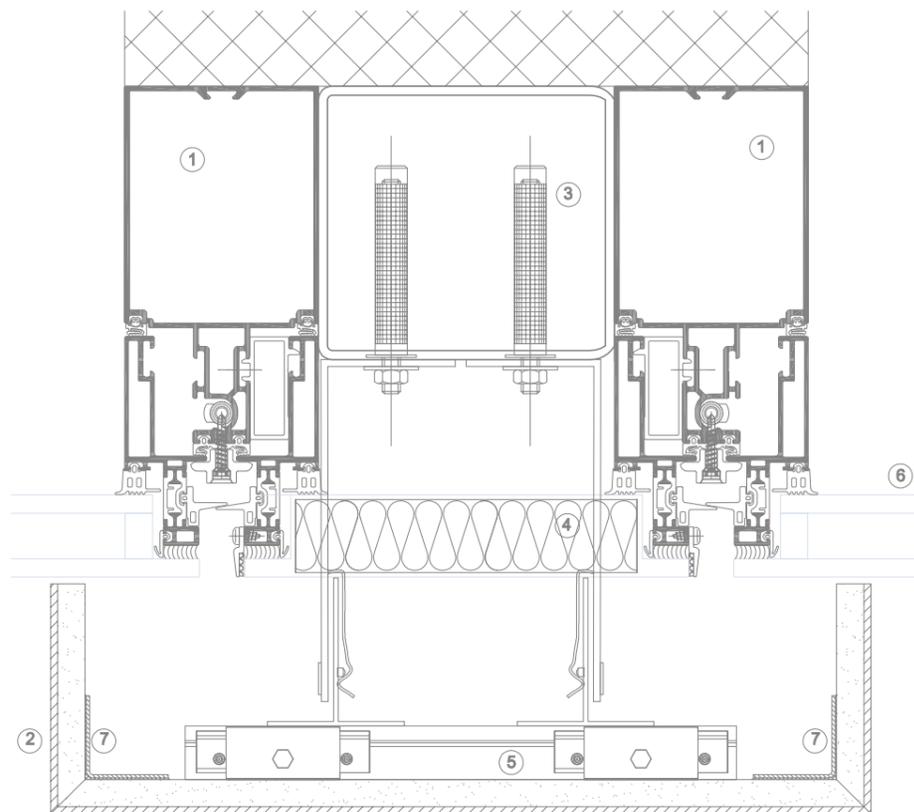
The columns created by GammaStone, brand of excellence known worldwide, characterize the most important and prestigious buildings.





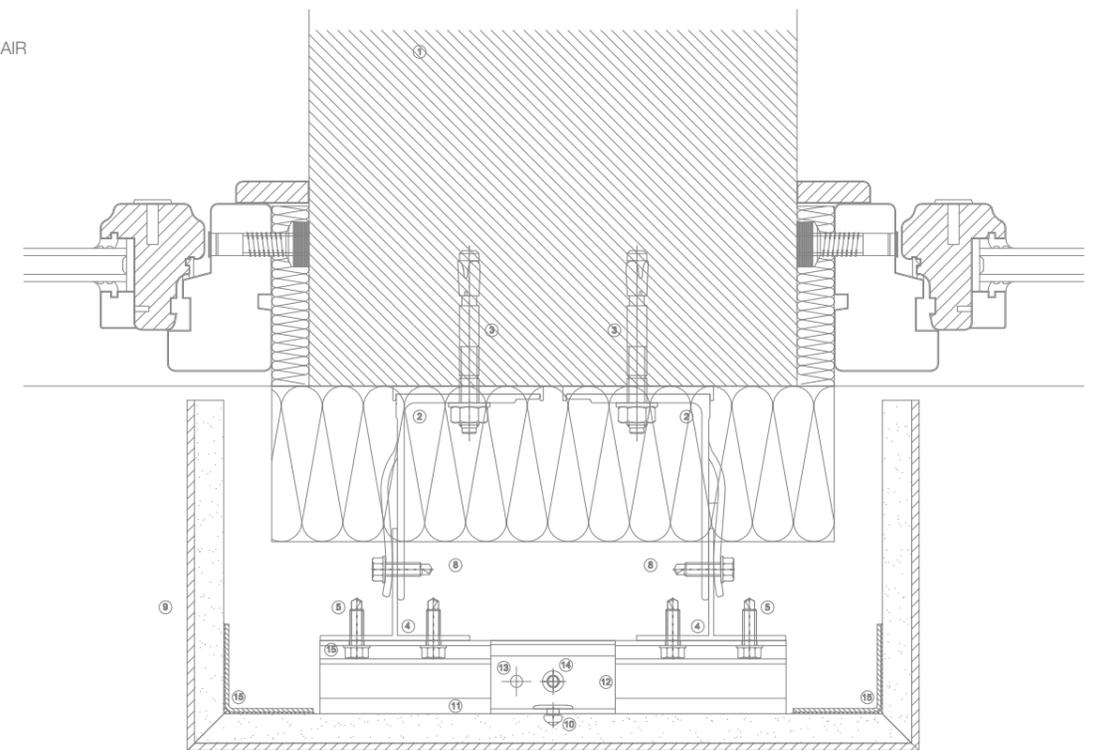
**Premade Pilaster  
on metal stud**  
Section I-I

- 1) Horizontal Rail
- 2) Gammastone AIR
- 3) Shimming profile
- 4) Insulation
- 5) Mechanical hanging system
- 6) Glass
- 7) Angle



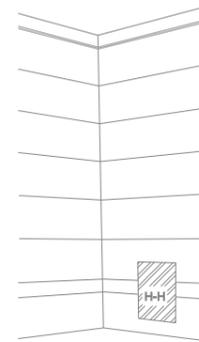
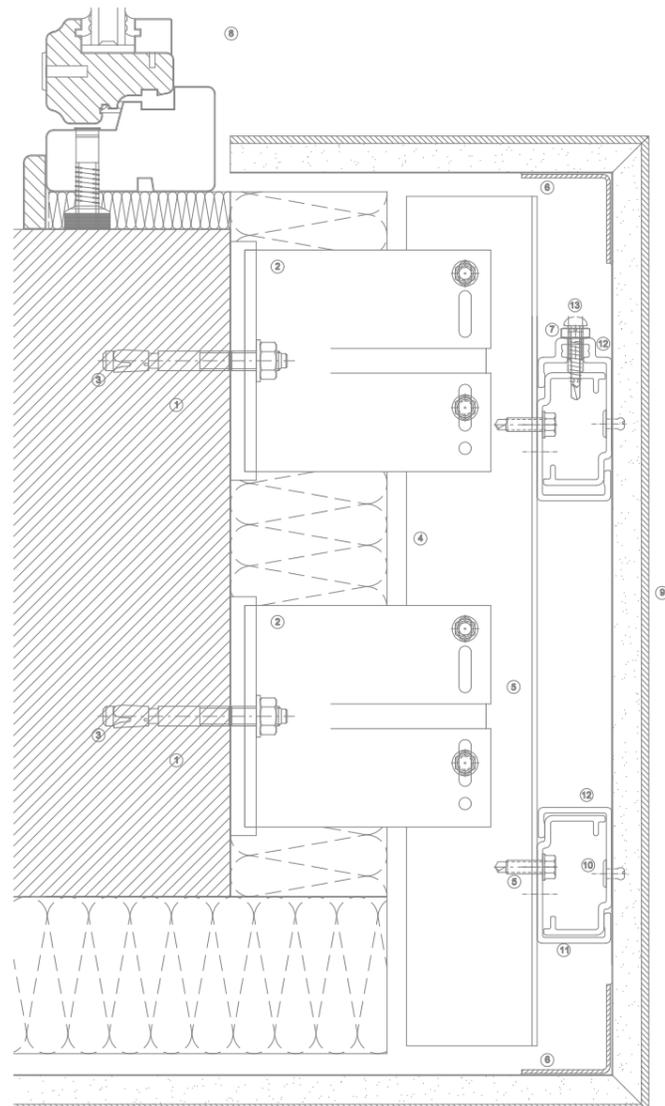
**Premade Pilaster  
on masonry**  
Section I-I

- 1) Wall
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw
- 15) Angle



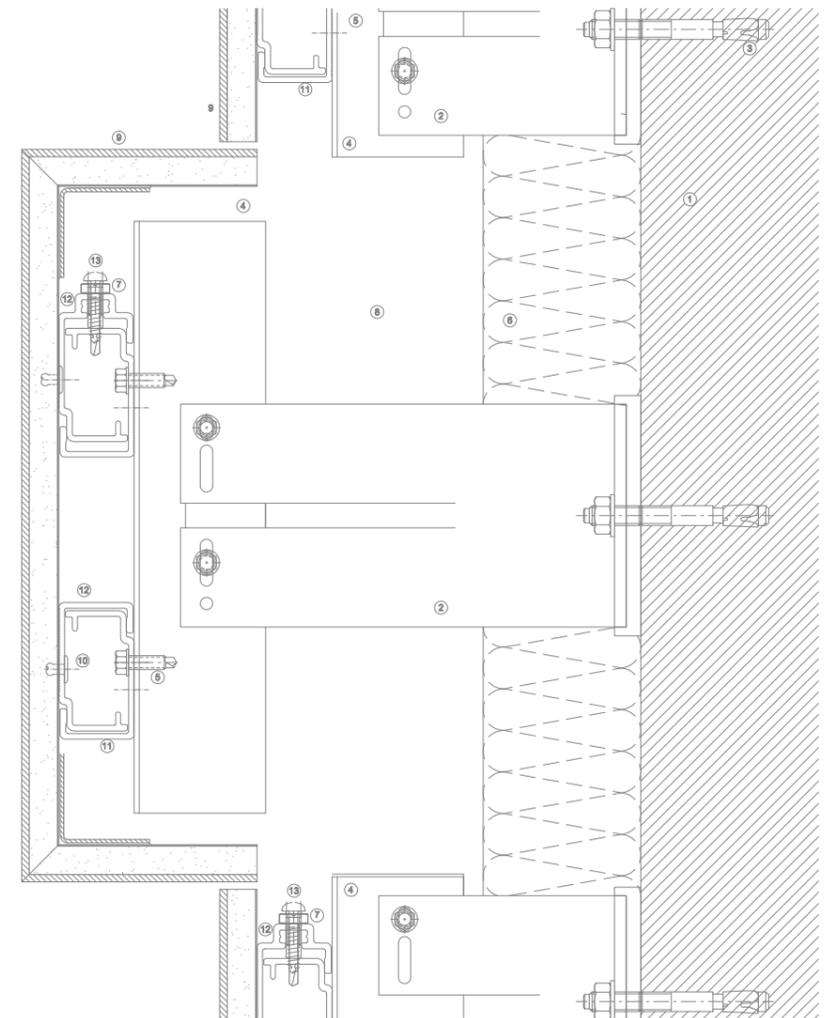
**Cornice**

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self dril. Screw
- 6) Angle
- 7) Adjust. Screw
- 8) Fixture
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw



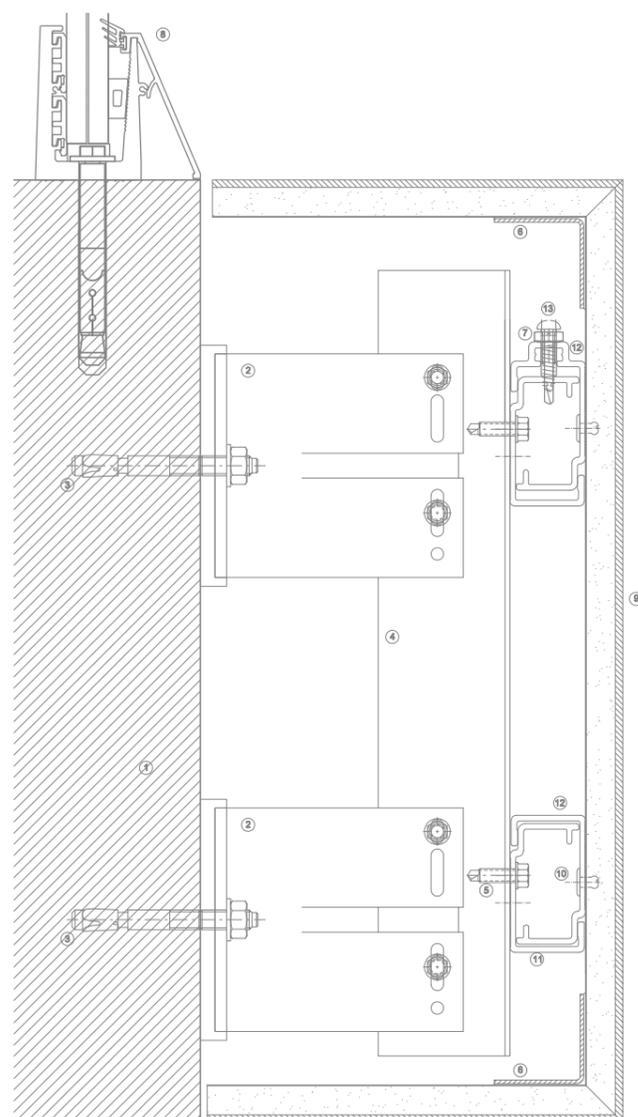
**Banding with invisible substructure**  
**Section H-H**

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self dril. Screw
- 6) Insulation
- 7) Adjust. Screw
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw



## Parapet

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Angle
- 7) Adjust. Screw
- 8) Parapet
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw

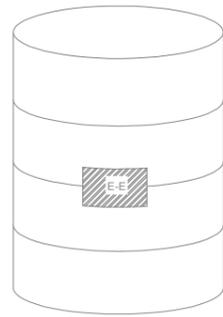


# CURVED PANELS

Leading technologies

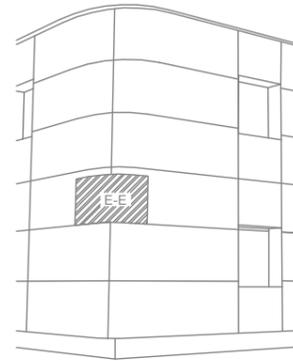
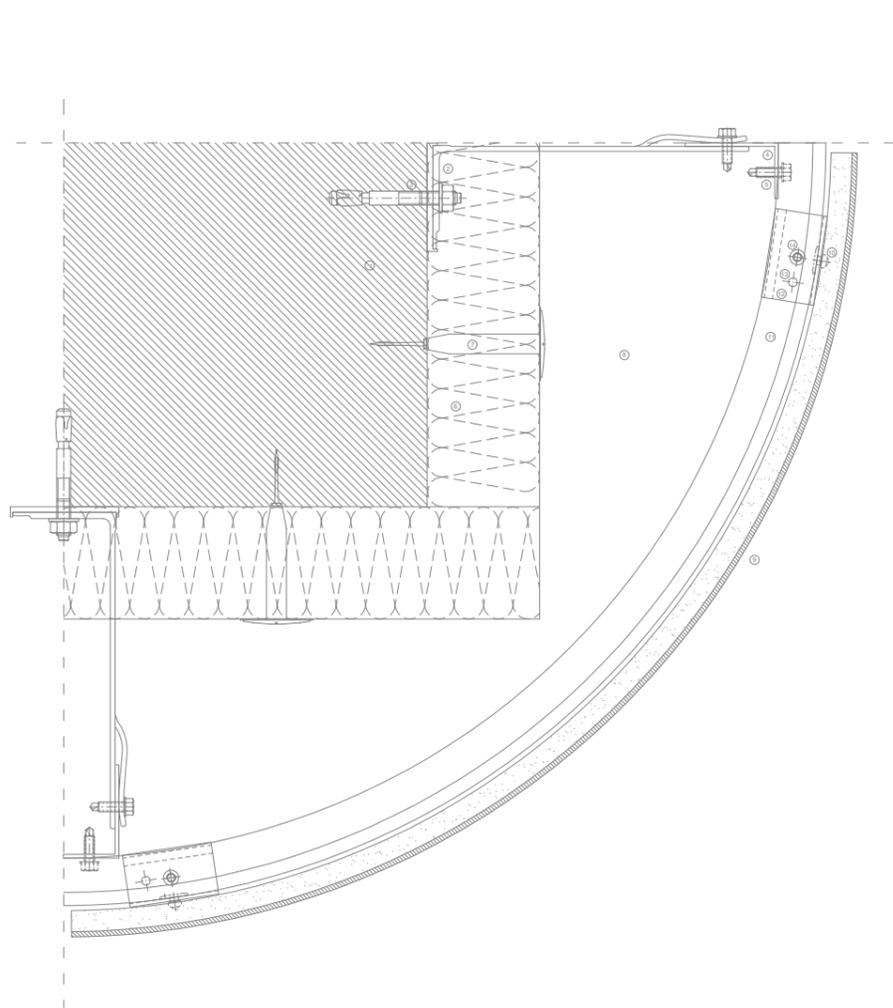
GammaStone produces CURVED PANELS in different materials, laboratory-made respecting all quality and security standards and ready to be installed. Every detail is scrupulously followed: finishing, assembly, etc. in compliance with our leading technologies proven by multiple certifications and technical tests performed.





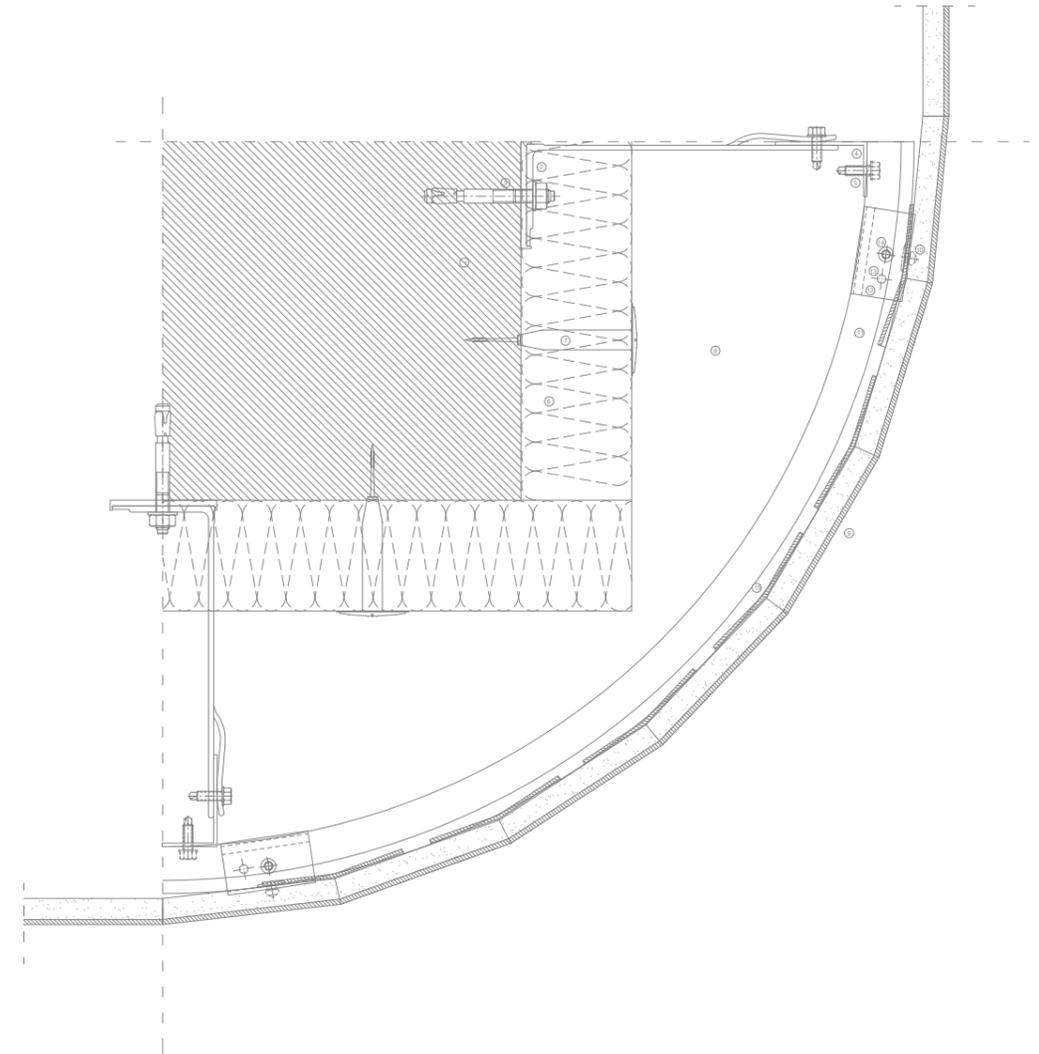
**Curve panel**  
**Section E-E**

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Adjust. Screw
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw



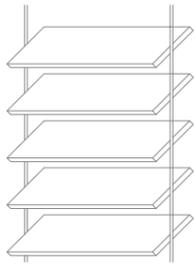
**Segmented Curve Panel**  
**Section H-H**

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Screw
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Angle



# SUNBLADES

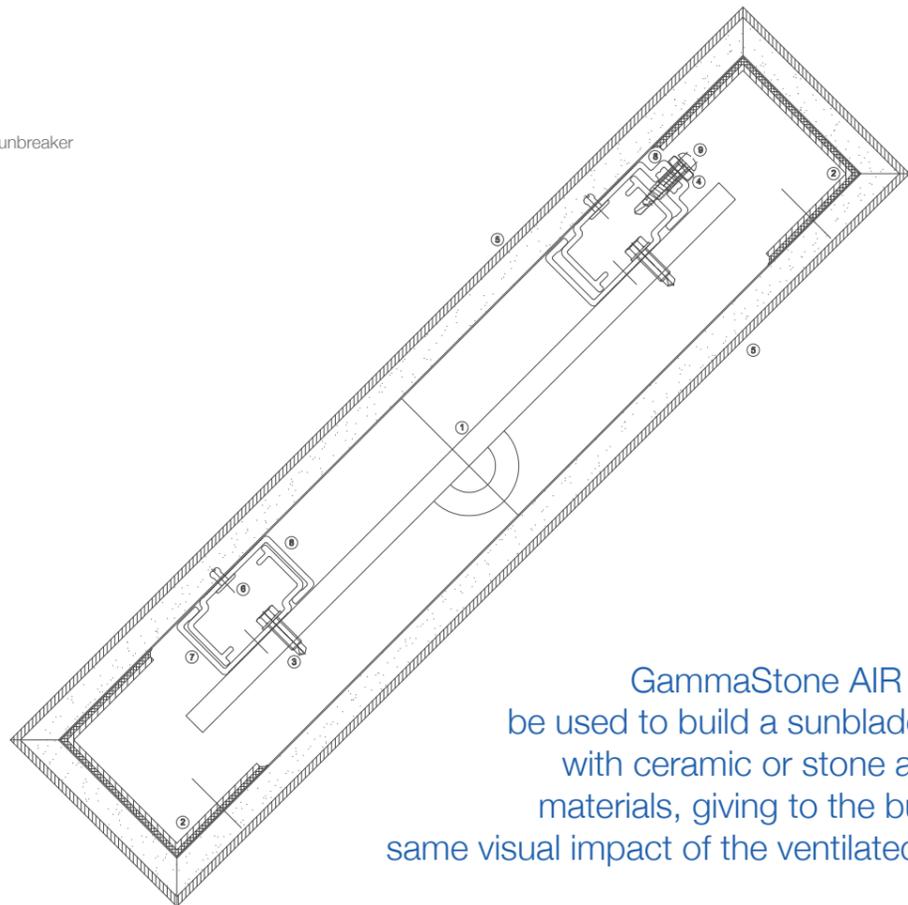
## The cladding system of the buildings



The sunblades are a critical functional and aesthetic element of the cladding system of the buildings. They counteract the solar radiation coming inside the building, playing a decisive role in energy saving and allow to reduce the bright glare of the buildings' interiors, thus increasing the comfort of living. The sunblades systems are realized in collaboration with specialized companies in this industry, providing the warranty on final products, that comprises the structure, the engine and any integrated home automation system that the designer may prefer. The structural system components (uprights, tubular, lightened sabers and others) are sized according to the loads acting in the each specific intervention, and may be customized according to the needs of designers.

### Sunblades

- 1) Structure of the sunbreaker
- 2) Metal Profile
- 3) Self drill. Screw
- 4) Adjust. Screw
- 5) Gammastone AIR
- 6) Rivet
- 7) Horiz. Profile
- 8) Hanger
- 9) Fixing Screw

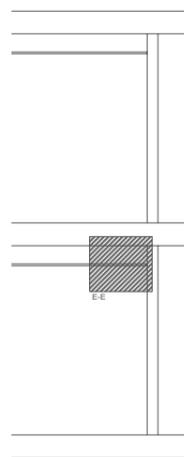


GammaStone AIR panel can be used to build a sunblades system with ceramic or stone as external materials, giving to the building the same visual impact of the ventilated facades.

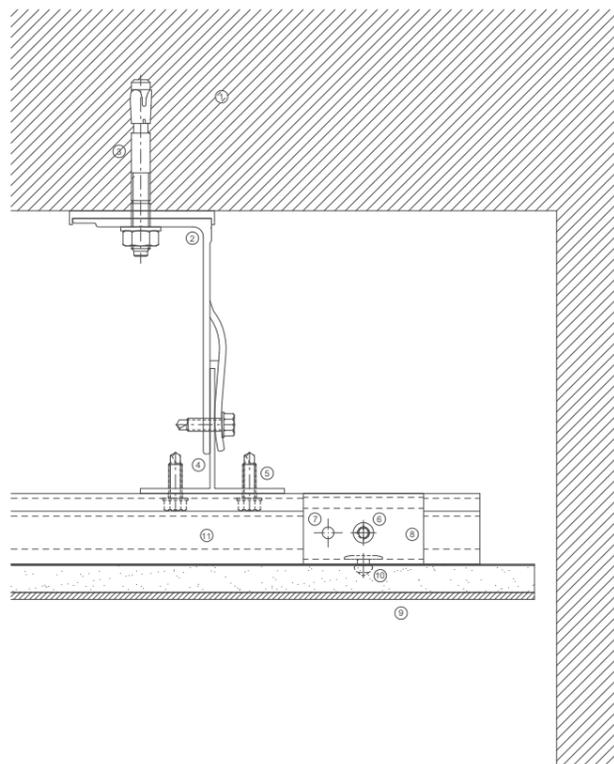


# CEILING COATING

## High ceiling stability

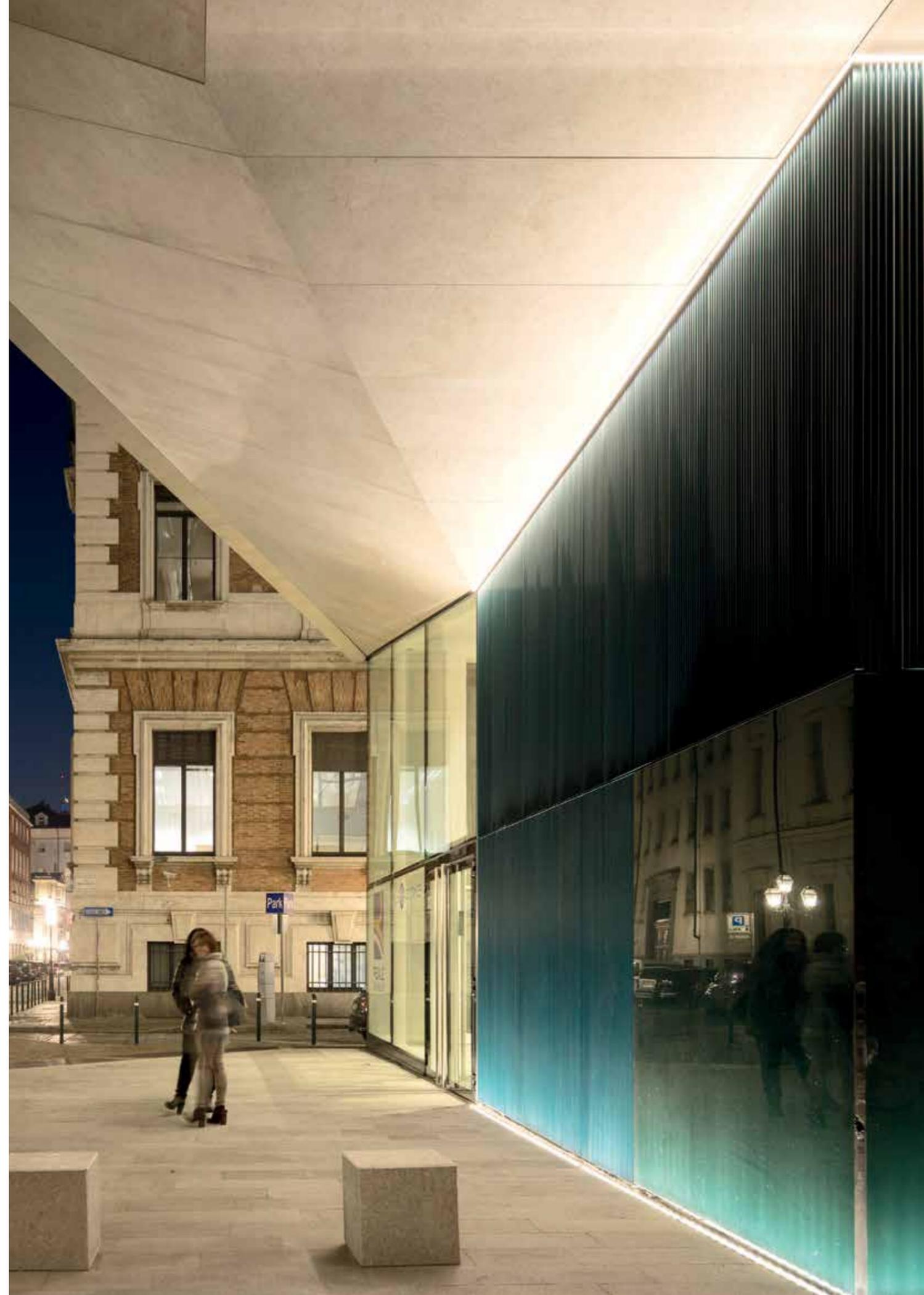


GammaStone AIR panels suit perfectly to ceilings; they can be the ideal solution for designers and interior designers. The system ensures lightweight, safe coupling system, high ceiling stability even in the areas characterized by relevant seismic risk.



### Ceiling

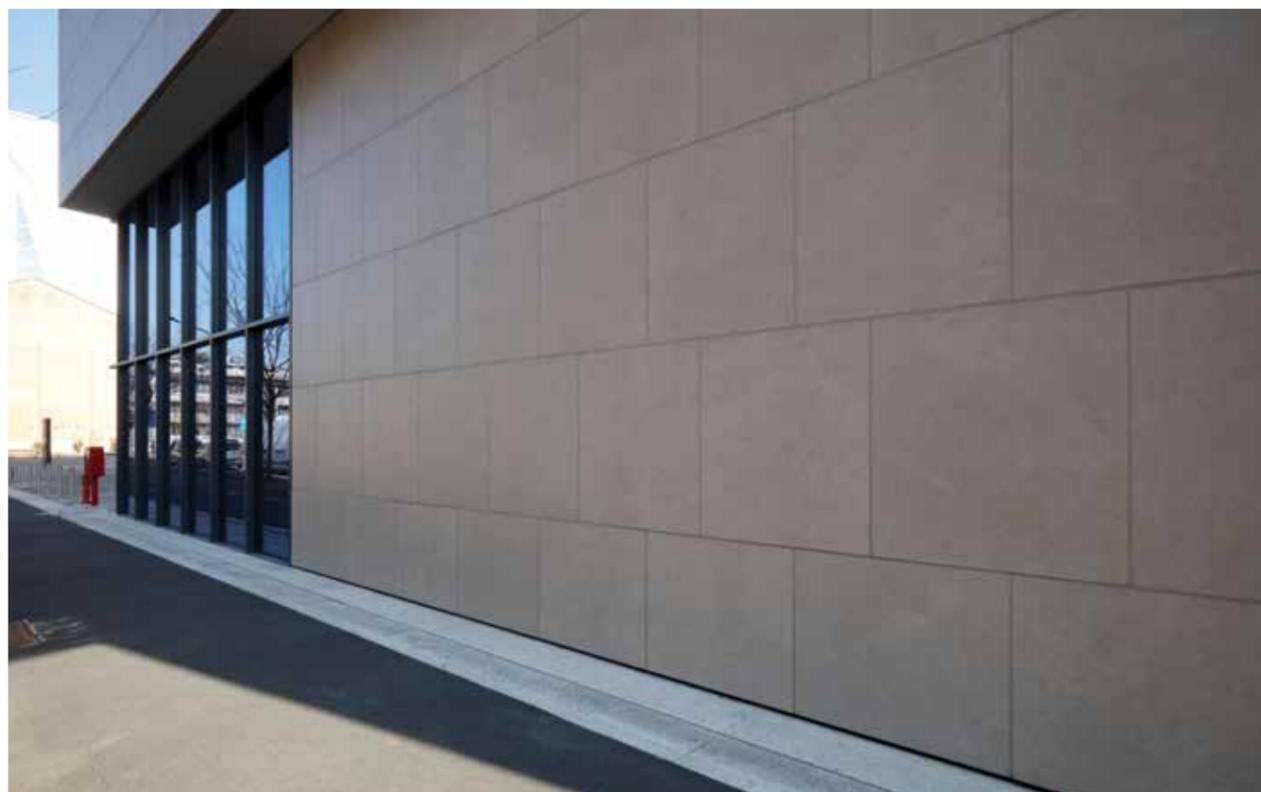
- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Adjust. Screw
- 7) Fixing Screw
- 8) Hanger
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile

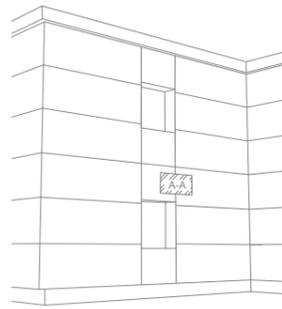


# CLOSED JOINT

GammaStone façade can be installed with closed joints

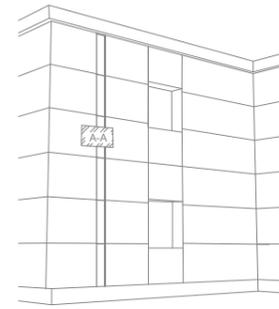
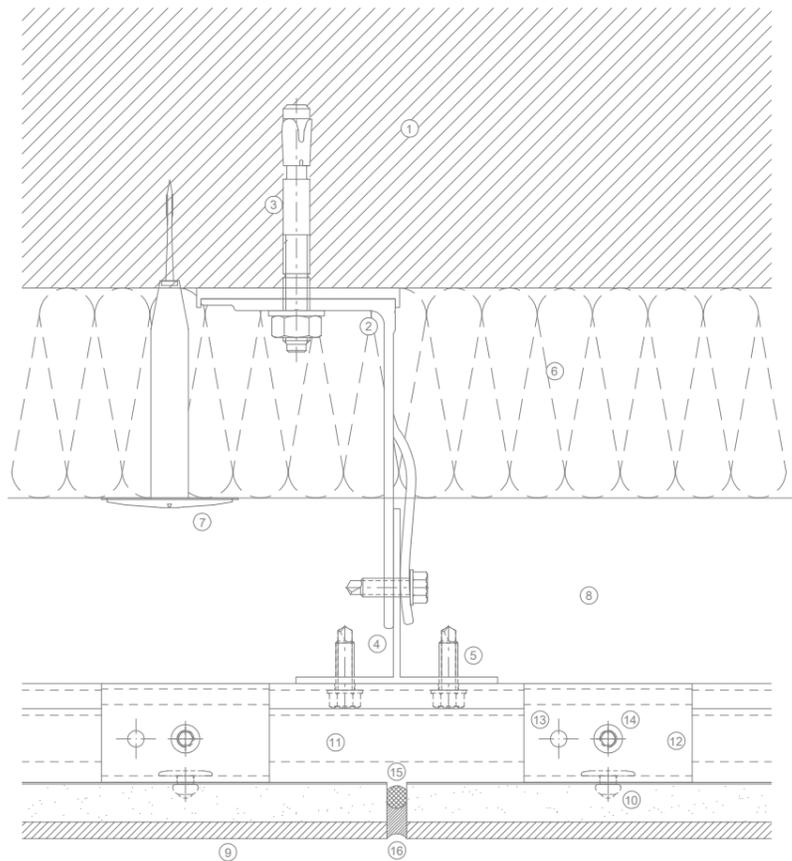
This kind of application allows GammaStone to offer a ventilated façade with the appearance of a typical full stone with grouted joints. The closed joint solution helps stop bulk water from getting into the cavity behind the panels, leading to a more durable assembly. The joints are closed with silicon, which can be matched or in contrast with the color of the façade.





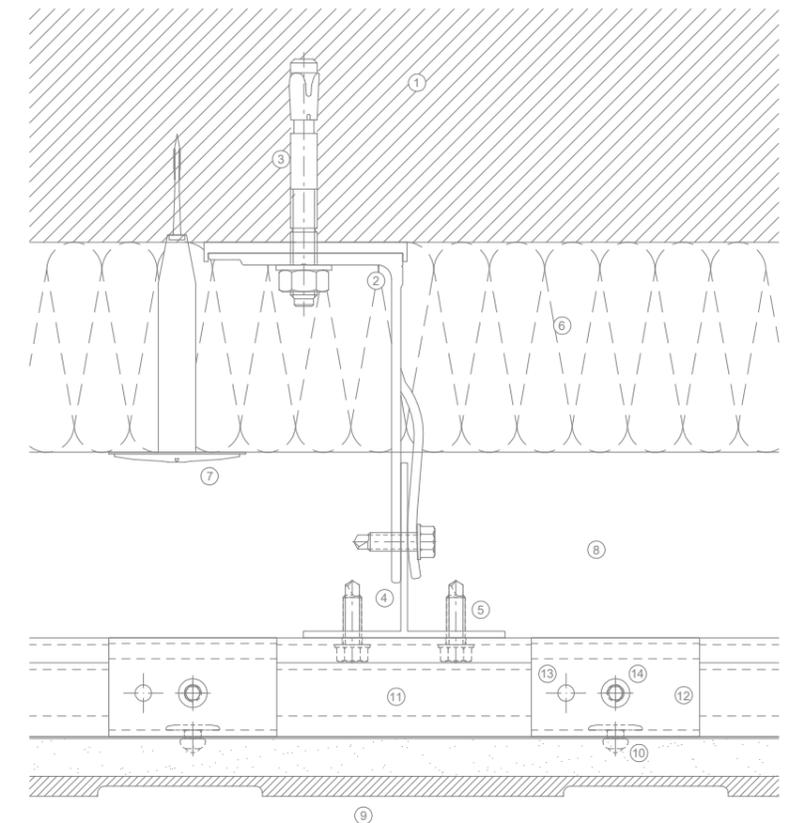
**Closed Joint with invisible substructure**  
**Section A-A**

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self dril. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw
- 15) Ethafoam
- 16) Sealent



**Fluted Panel with invisible substructure**  
**Section A-A**

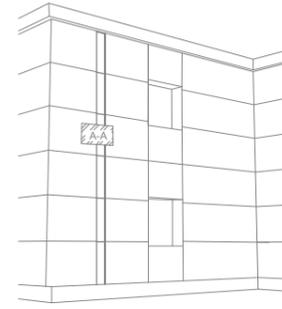
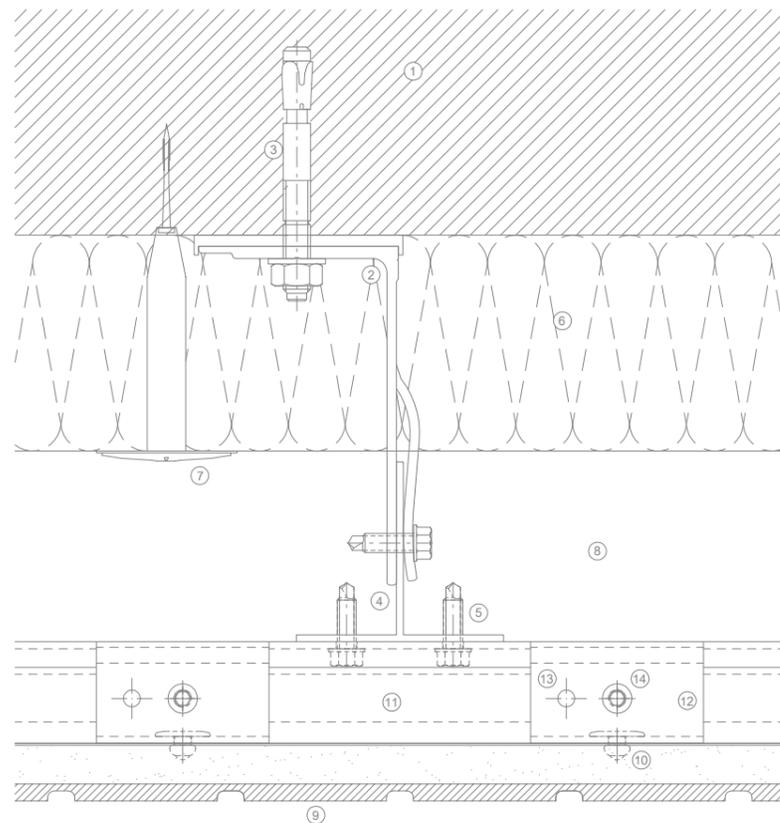
- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self dril. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw





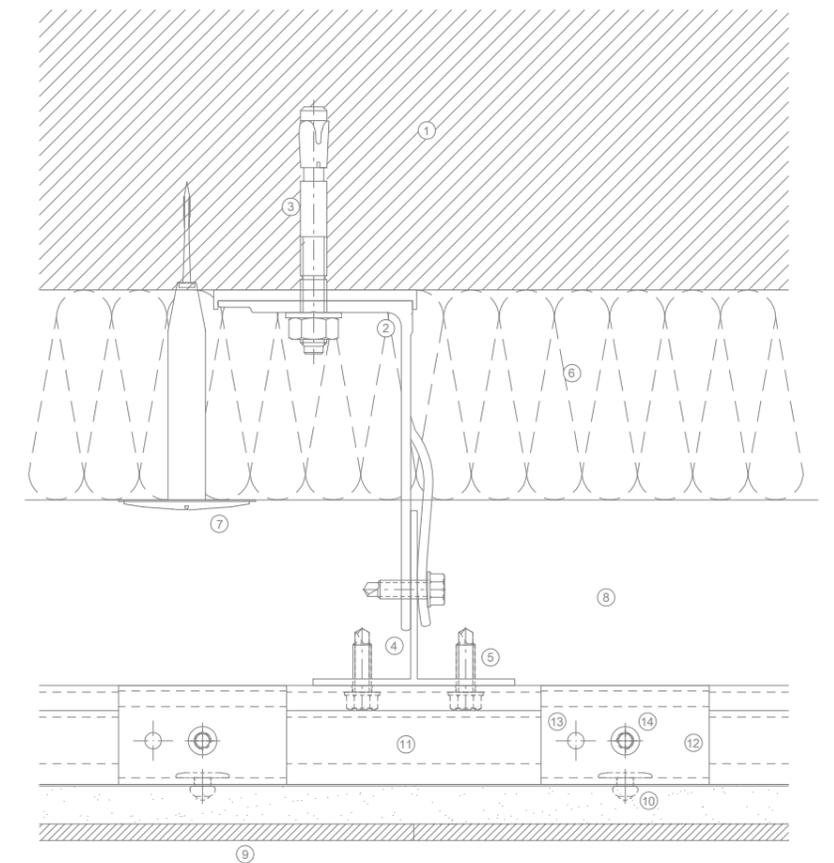
**Grooved Panel with  
invisible substructure**  
Section A-A

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self dril. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw



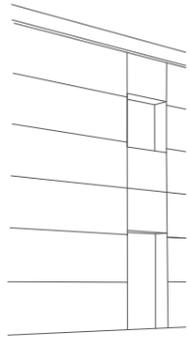
**Hairline joint panel with  
invisible substructure**  
Section A-A

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self dril. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw



# DOORS COATING

The GammaStone panels are perfectly suitable to clad interior or exterior doors

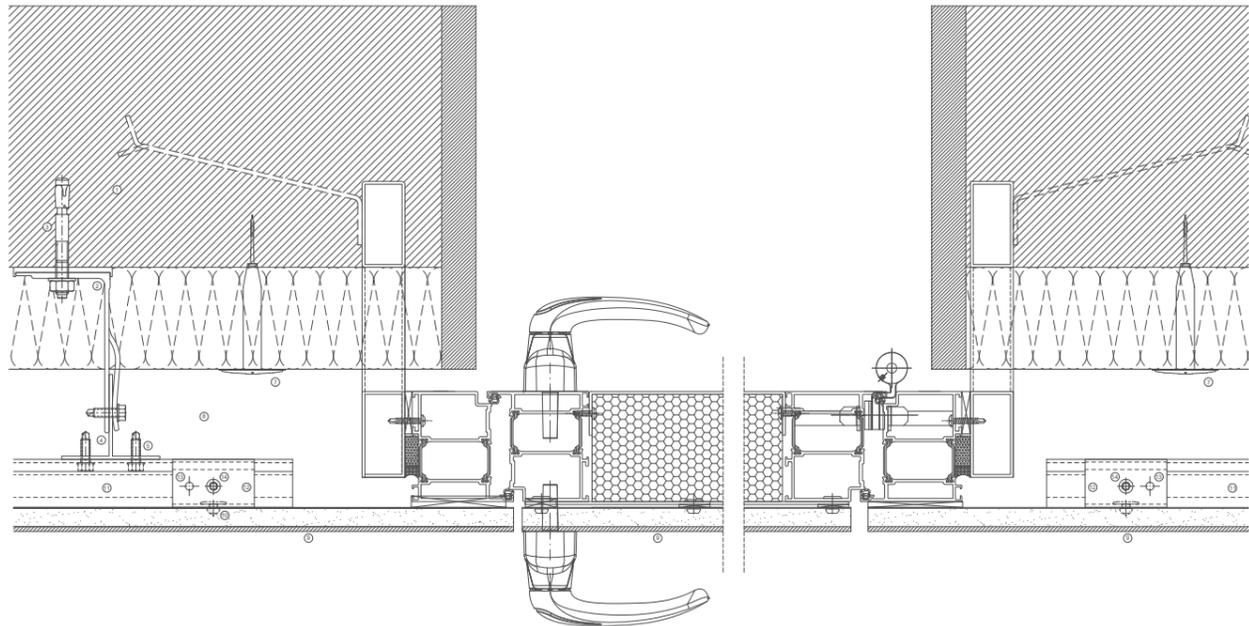


## Door

- 1) Basement
- 2) Bracket+Isol.
- 3) Anchor
- 4) Mullion
- 5) Self drill. Screw
- 6) Insulation
- 7) Insul. Fixing
- 8) Ventilation
- 9) Gammastone AIR
- 10) Rivet
- 11) Horiz. Profile
- 12) Hanger
- 13) Fixing Screw
- 14) Adjust. Screw

This solution allows to have the continuity between the façade and the door, providing an incomparable aesthetic effect.

Thanks to the large panel sizes the door will be made of one GammaStone panel with the same finish of the façade. Using the specific framing engineered by GammaStone to support the panel, the door will be installed in line with the façade, the hinges are internal and invisible outside.



The company uses the latest machinery generation; able to increase the quality standards of the products and to reduce the environmental impact. It has the merit of having been able to create and patent working phases and exclusive solutions.

# WORKING PHASES

## 1. GANGSAW

The marble or granite blocks are cut with a multiblade gang saw or multiwire saw depending on the stone type.

## 2. POLISHING

The GammaStone AIR panels are polished, honed or brushed depending on the finish requested by the designer.

## 3. RIVETING

The panels can be pre-drilled in the factory or drilled on site with special tools. Fixing is carried out from outside after leveling the panel.

## 4. AUTOMATED SYSTEM

A fully automated system for continuous panel production.

## 5. PANEL EDGING AND DRILLING

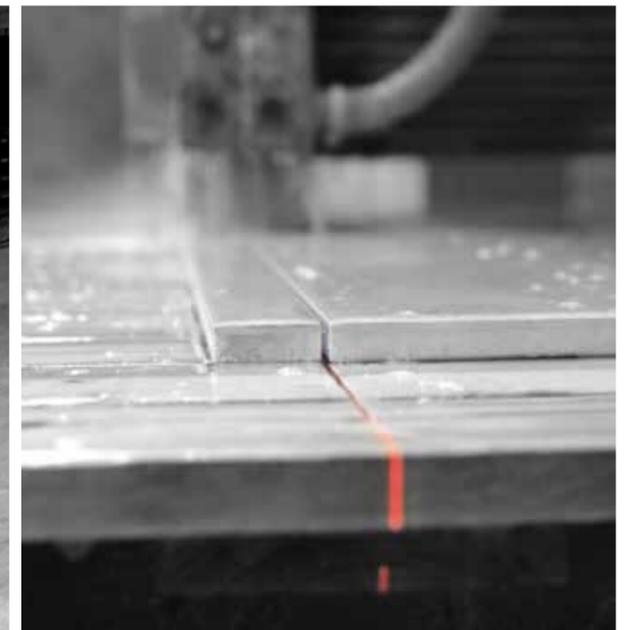
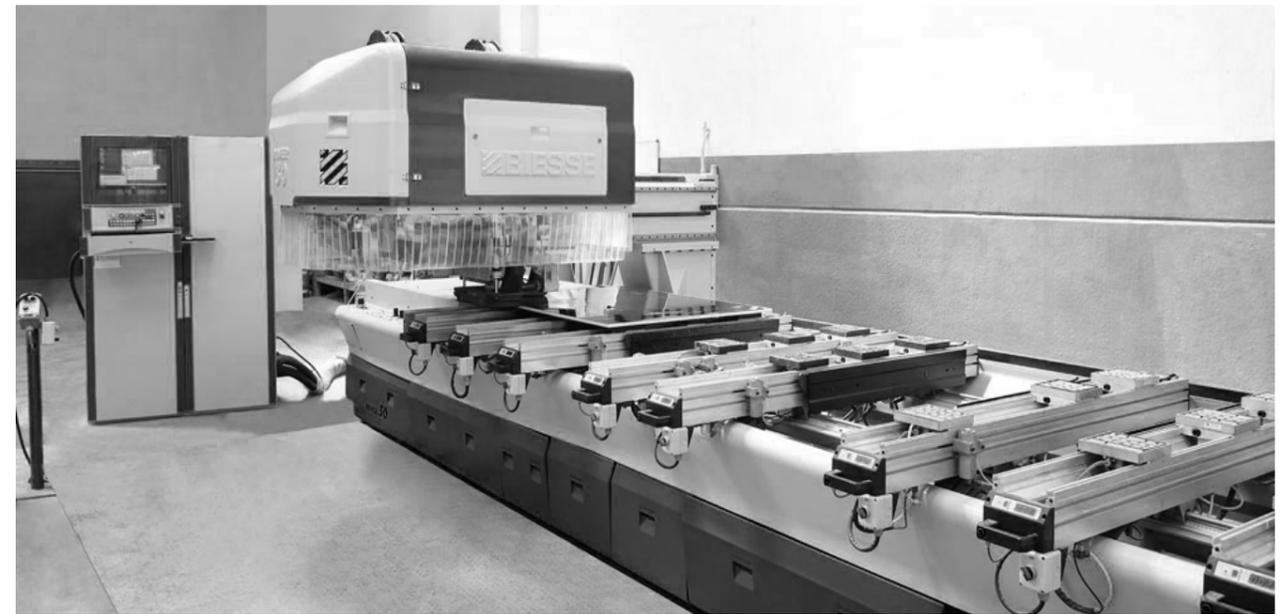
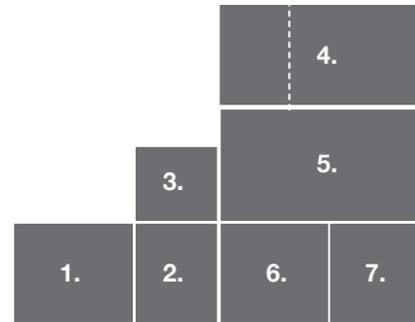
GammaStone uses CNC machines which grant quality standards to meet customer's needs.

## 6. CUTTING WITH WATERJET

GammaStone uses a waterjet for special cuts and grooves. This machine allows cutting the panel into any form required by the designer.

## 7. CUTTING WITH BRIDGE SAW

GammaStone uses the newest cutting technologies for cut-to-size panels in projects with custom panel sizes. The panel cuts are optimized to minimize material wastage.



# IMPACT RESISTANT & COMPRESSIONS



Impact  
Resistant



Bending  
Resistant



Compression  
Resistant

GammaStone AIR slabs are extremely lightweight and have a **high resistance to impacts, bending and compressions** thanks to the use of excellent and innovative materials which are used in the aerospace industry. GammaStone AIR slabs represent a state-of-the-art solution that guarantees high performance standards and offers an unparalleled aesthetic beauty far superior to any solution available today on the market. GammaStone AIR system enables the designer to respond excellently and in maximum safety to the increasing use of large-format panels to cover buildings.

The panels may be anchored mechanically, concealed or exposed, onto the substructure by means of specific fixtures. The guarantee of resistance to wind load is greatly superior to any technical requirement imposed by the current regulations even in climatic zones subjected to weathering extremes such as monsoons and hurricanes.



Watch the video of  
resistant to impacts



## Purpose of the test:

Pendulus impact resistance according to ETAG 034-1:2012 guidelines and UNI EN 14019:2004 regulation on the façade cladding. The test has been performed with a hard body consisting of a steel ball, 1 kg mass, as per UNI 8201 specifications, suspended by an inextensible steel cable.

GammaStone Natural AIR  
Roman Travertine thick 5 mm  
Invisible fixing solution

1 kg »»»



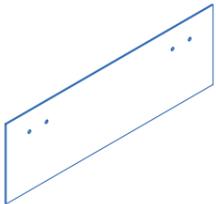
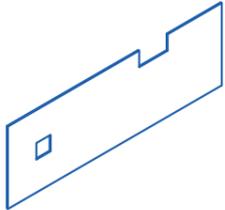
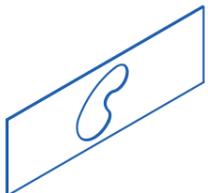
# MANUFACTURING TECHNIQUES

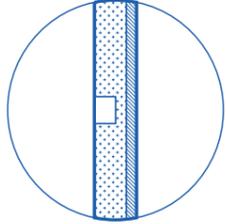
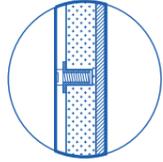


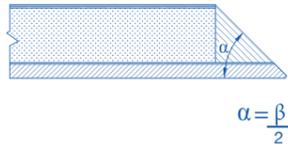
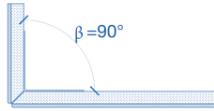
# GAMMASTONE GLASS AIR

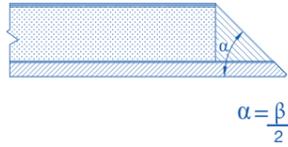
## Manufacturing techniques

PANEL CUTTING	CODE
Same size cut for quantities over 30 sqm. Sides in multiple of 4 cm.	-
Same size cut for quantities below 30 sqm. Sides in multiple of 4 cm.	GL01
Out of square cut, of trapezes, triangles, parallelograms (min. 1 sqm per single format based on the circumscribed rectangle).	GL02
Shaped cut of special and round shapes on the circumscribed rectangle (min. 1 sqm per single size based on the circumscribed rectangle).	GL03

PASSING HOLES	CODE
 Passing raw holes far from the edge and from the other min. 2xØ Over 20mm slots and cut-out price list do apply.	GL20
 Raw edge slots (simple geometrical shapes. Min. perimetral 1 lm). For slots bigger than 1 perimetral 1m look at the shaped slots.	GL21
 Perimetral internal shapes slot (special geometrical shapes).	GL22

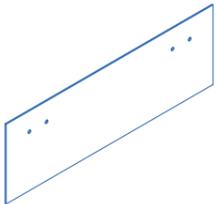
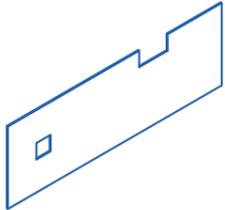
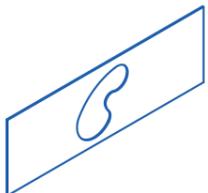
PRE-DRILLING / BLIND HOLES	CODE
 Blind holes made in the back side of the panel for the for the installation of the hangers.	More than 100 pieces same positioning Up to 100 pieces same positioning
 Threaded insert M4 (value to add to the code GL10).	GL11

90° MONOLITHIC EXTERNAL CORNER	CODE
 Only corner cut with external edge of the panel in section. Min. 1 lm (note that the not assembled material can be irregular).	GL05
 Assembly, positioning of bent corner and gluing (minimum 1 meter for each assembled corner).	GL30
Two edge working, assembly and positioning of bent corner, standard gluing and chamfer of the edge (min. 1 lm per single assembled corner).	GL05x2 + GL30

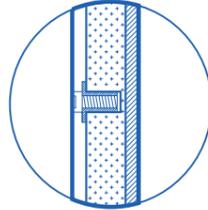
MONOLITHIC EXTERNAL CORNER WITH VARIABLE CORNER	CODE
 Only corner cut with external edge of the panel in section. Min. 1 lm (note that the not assembled material can be irregular).	GL06
 Assembly, positioning of bent corner and gluing (minimum 1 meter for each assembled corner).	GL32
Two edge working, assembly and positioning of bent corner, standard gluing and chamfer of the edge (min. 1 lm per single assembled corner).	GL06x2 + GL32

# GAMMASTONE GRES AIR, NATURAL AIR, GFRC PLUS AIR, MOSAIC AIR AND BRICK AIR Manufacturing techniques

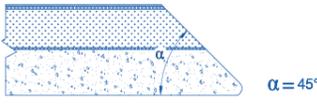
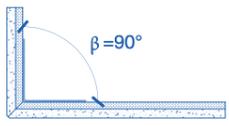
PANEL CUTTING	CODE
Cut/Squaring same format quantity more then 30 sqm.	GL01
Cut/Squaring same size quantity below 30 sqm	GL01
Out of square cut of trapezes, triangles, parallelograms (min. 1 sqm per single format based on the circumscribed rectangle).	GL02
Shaped cut of special and round shapes (minimum 1 sqm per single format for the circumscribed rectangle).	GL03

PASSING HOLES	CODE
 Raw holes Ø25-30-35-40 mm. More than Ø40 look at the passing slots.	GL20
 Raw edge slots (simple geometrical shapes. Min. perimetral 1 lm). For slots bigger than 1 perimetral lm look at the shaped slots.	GL21
 Perimetral internal shapes slot (special geometrical shapes).	GL22

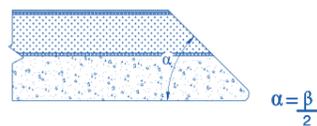
## PRE-DRILLING / BLIND HOLES

		CODE
	Blind holes made in the back side of the panel for the for the installation of the hangers.	More than 100 pieces same positioning GL10
		Till 100 pieces same positioning GL10
	Threaded insert M4 (value to add to the code GL10).	GL11

## 90° MONOLITHIC EXTERNAL CORNER

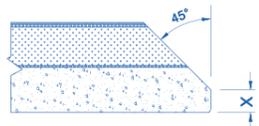
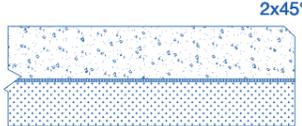
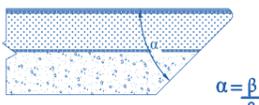
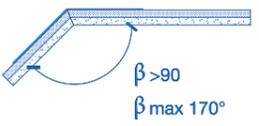
		CODE
	Only corner cut with external edge of the panel in section. Min. 1 lm (note that the not assembled material can be irregular).	GL05
	Assembly, positioning of bent corner and gluing (minimum 1 meter for each assembled corner).	GL30
Two edge working, assembly and positioning of bent corner, standard gluing and chamfer of the edge (min. 1 lm per single assembled corner).		GL05x2 + GL30

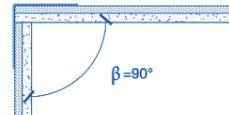
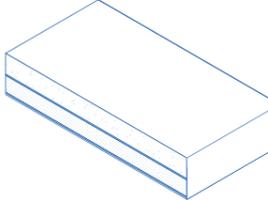
## MONOLITHIC EXTERNAL CORNER WITH VARIABLE CORNER

		CODE
	Only corner cut external edge of the panel in section. Min. 1 lm (the material not assembled can have some imperfection in the visible edge).	GL06
	Assembly and positioning of bent corner, standard gluing and chamfering of the edge (min. 1 lm per single assembled corner).	GL32
Two edge working, assembly and positioning of bent corner, standard gluing and chamfer of the edge (min. 1 lm per single assembled corner).		GL06x2 + GL32

# GAMMASTONE GRES AIR, NATURAL AIR, GFRC PLUS AIR, MOSAIC AIR AND BRICK AIR

## Manufacturing techniques

CUT IN SECTION		CODE
	45° cut of the panel in section.	GL04
	Chamfer (min. 1 lm per single size).	GL25
MONOLITHIC INTERNAL CORNER WITH VARIABLE CORNER		CODE
	Only corner cut internal edge of the panel in section. Min. 1 lm (the material not assembled can have some imperfection in the visible edge).	GL07
	Assembly, bent corner positioning and external corner chamfer (min. 1 lm per single assembled corner).	GL33
Two edge working, assembly and positioning of bent corner, standard gluing and chamfer of the edge (min. 1 lm per single assembled corner).		GL07x2 + GL33

MONOLITHIC INTERNAL CORNER		CODE
	Positioning of bent corner and gluing (min. 1 lm per single assembled corner).	GL31
EDGE PAINTING		CODE
	Visible edges in the same color of the panel finishing (min. 1 lm per single format).	GL40
SURFACE TREATMENT		CODE
	Treatment of the GammaStone AIR panel surface.	GL50

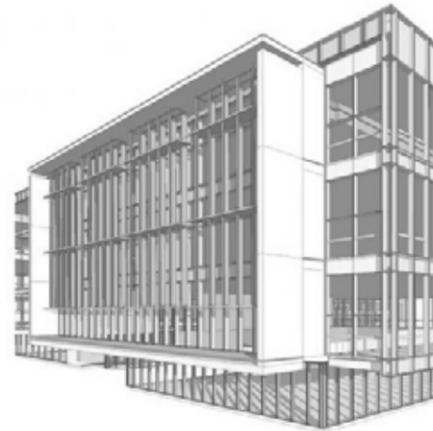
# SERVICES



Student Residence VITA  
New Castle - UK



## BUILDING INFORMATION MODELING (BIM) SERVICES



SYNCRONIA beta  
ARCHITECTURE VICTIMS

archi  
portale

n55  
BIM

bimobject®



ArchiCAD



AUTODESK  
REVIT

We created objects/models for the most  
common BIM design software.

GammaStone is on the forefront of building façade engineering application of BIM software, allowing our clients to comply with project BIM requirements. GammaStone's BIM application includes clash detection between façade elements and surrounding construction, an overall coordination between the structure and other trades. We can also translate the 3D façade system detailing into part fabrication drawings for manufacturing applications. We are adding BIM object/models of GammaStone panels in the following BIM "cloud" libraries and portals

## STONE SOURCING SERVICES

In addition to design consulting, engineering and drafting for natural stone cladding projects, CDC offers full stone sourcing services to owners, architects and contractors. We can identify economical, aesthetically acceptable and structurally sound material options, and assist in its procurement for architectural stone cladding applications.

- Research and procure samples natural stone from worldwide quarries
- Evaluate stone quarry and fabricator capabilities
- Develop budget pricing for material acquisition and cladding installation
- Establish preconstruction stone testing and observation protocol
- Suggest value enhancing stone material alternatives and technical detailing options
- Observe stand-up slab mockup, and coordinate record samples
- Coordinate full-scale pre-fabrication visual mockup at stone fabrication facility
- Review contract drawings, shop drawings and calculations
- Perform subcontractor design peer reviews
- Observe material fabrication for aesthetic and structural conformance
- Establish production stone testing protocol, and observe testing
- Review and comment on field workmanship mockup
- Observe stone cladding installation on project site for conformance with design requirements



# DESIGN SERVICES

The design of a cladding system of a new building whether it may be ventilated, micro-ventilated etc. is a complex procedure. It requires industrial planning criteria which should be considered and defined before beginning the realization in order to avoid substantial and / or unforeseen changes during the various stages of the manufacturing process. GammaStone is able to develop projects considering the different modules of the façade: jointless architectural elements made or façade components like openings, string courses or other non-modular elements. Those elements are usually needed during renovations.

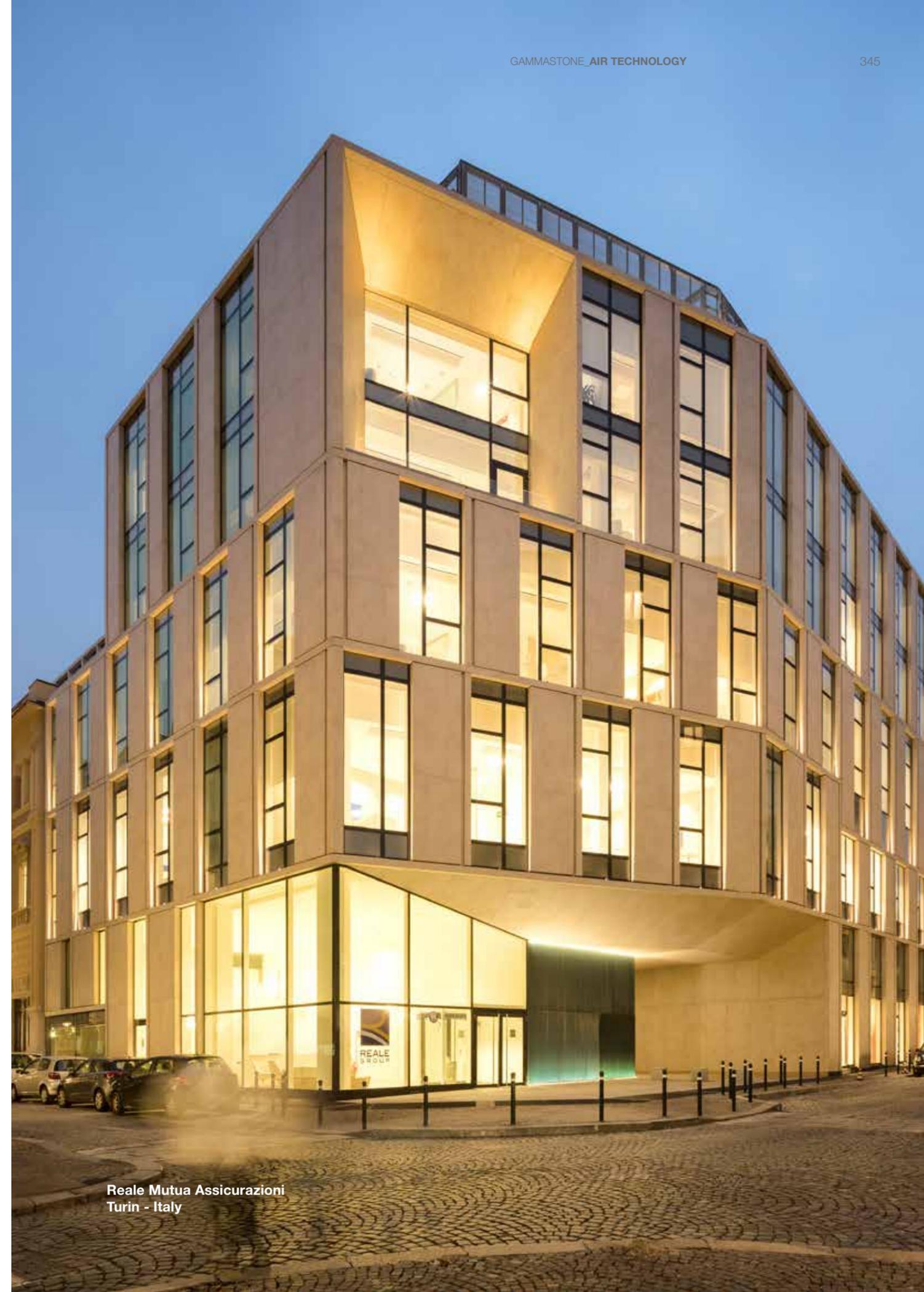
GammaStone technical department elaborates customized executive drawings in order to optimize the number of cuts on the slab, to obtain faultless aesthetics in the combination of the formats avoiding wastage of valuable materials.

GammaStone Technical department consists of a team of architects and engineers aimed to develop projects following all the phase of the design process:

1. Acknowledgement of the projects and / or the architectural concept for the cladding system of the building;
2. Feasibility assessment;
3. Identification of the materials of the perimetric wall to be covered;
4. Definition of the structural plan and the respective general calculations;
5. Implementation of the projects executive drawings.

## **GAMMASTONE OFFERS THE FOLLOWING INTEGRATED DESIGN SERVICES:**

- Development of construction drawings
- Development of records
- Mounting plan
- Dimensioning of the panels
- Calculations of the joints
- Optimization of scraps according to the dimensions of the slabs.
- BOM processing
- Static analysis
- Packing list processing



**Reale Mutua Assicurazioni**  
Turin - Italy

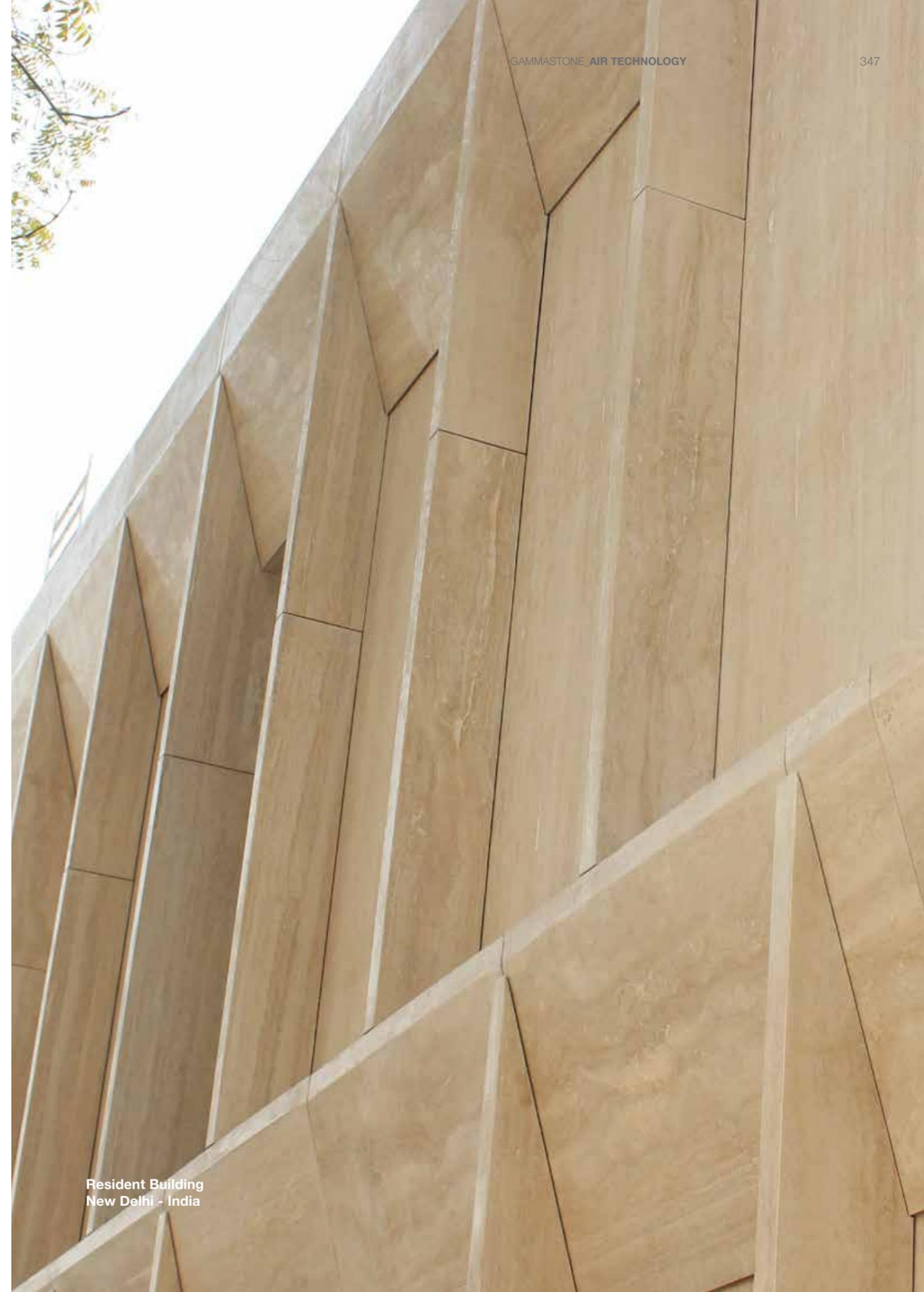
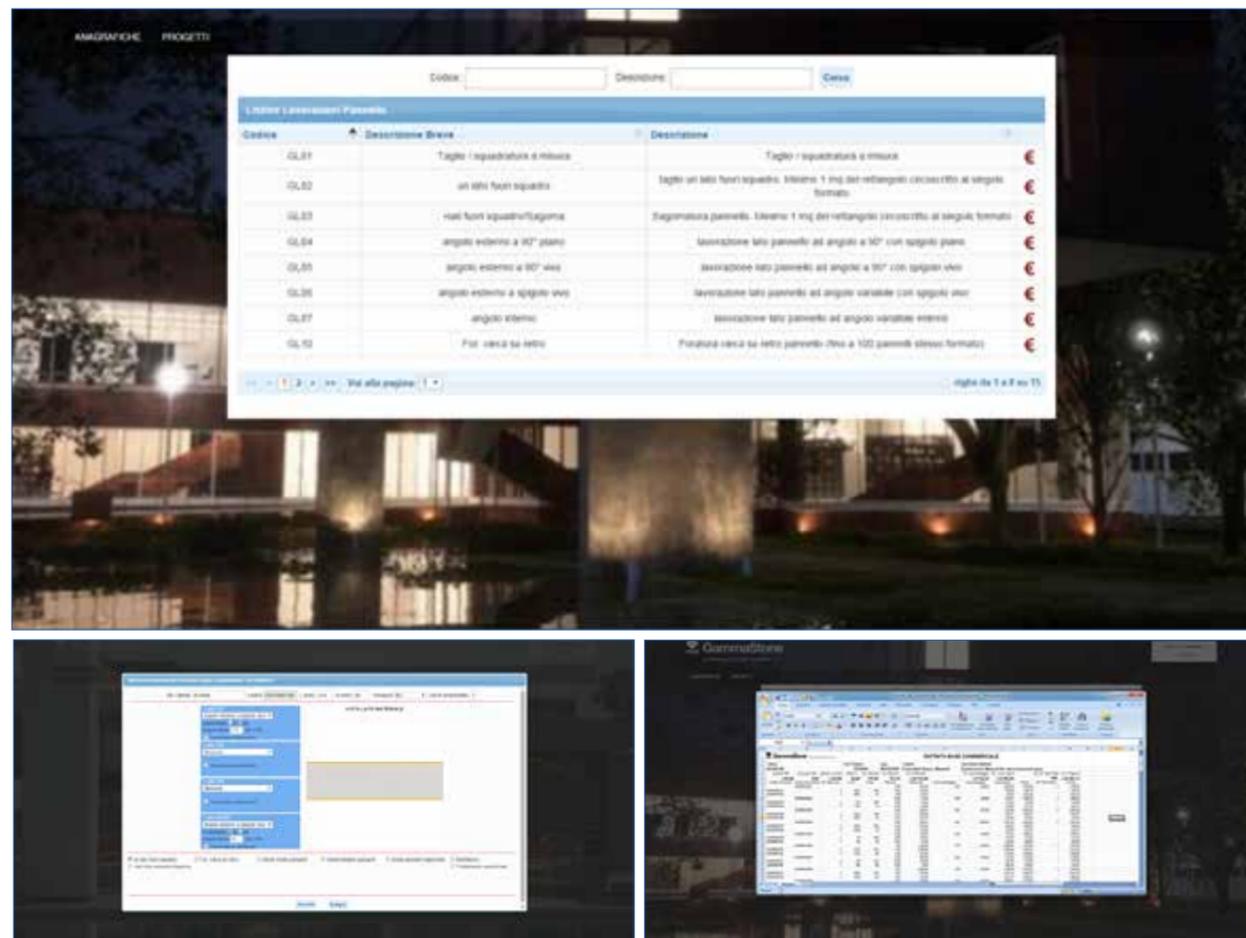
# PRODUCT CONFIGURATOR

GammaStone has developed its own web application to map the façade by a self-explanatory computation of the GammaStone panels and of the monolithic elements that compose it. This computation allows to customize a project and associate it with every single customer. This project contains all the information of technical and commercial aspects that will determine the Bill of Materials, the production process, the relative total cost and the cost for every piece and specific manufacturing technique applied.

## THE INSERTION PROCEDURE COMPRISE FOR THE FOLLOWING MACRO PHASES:

- 1) Inserting a new project associated with the customer, the site and the material;
- 2) Technical computation with easy logical insertion of flat panels and assembled components with monolithic corners, with any additional manufacturing technique required;
- 3) Verification of the total and specific costs of the project through a screen visualization of the project report.
- 4) Commercial release of the quote / order resulted from the performed compilation.

Thanks to this application the customer has a clear and detailed overview of all the layers and of all the GammaStone AIR materials used in the project.



Resident Building  
New Delhi - India

# STATIC ANALYSIS

The static calculations consider a uniformly distributed unit load (weight, pressure and depression). The loads used for the different sizing procedures are evaluated using the principle of superposition (linear-elastic calculation). The procedures for designing all the elements of the façade are conform to the following combinations considering the most significant stresses (wind load, own weight, load from ice formations, seismic load).

Note: the design of the façade elements will be provided for the combination of the most relevant load. Details relating to the design of the shelves, to the fastening of the bracket to the base material and fixing of the profile to the bracket are shown in separate documents (statics of the system).

**2. Carico**

**2.1 Carico vento**

Stato, norma pertinente: Italia, EN 1991-1-4, NAD-IT

Valore caratteristico della pressione del vento:  $W_{k(z)} = q_p(z) \cdot c_{pe}(z)$

Zona vento: 3

Altitudine: 200,00 m

Velocità del vento  $v_s$ : 27,00 m/s

Classe di rugosità del terreno,  $Z_s, Z_{min}$ : III, 0,300 m, 5,000 m

Orografia: Non influente

Pressione dovuta alla velocità di picco del vento:  $q_p(z) = [1 + 7 \cdot I_s(z)] \cdot \frac{1}{2} \cdot \rho \cdot v_s^2(z)$

$v_s(z) = c_s(z) \cdot c_e(z) \cdot v_b$      $I_s(z) = \frac{k_t}{c_s(z) \cdot \ln(z/z_0)}$

Larghezza di influenza per carico vento (Punto Fisso): 500,0 mm

Larghezza di influenza per carico vento (Punto Scorrevole): 500,0 mm

A = Lato  
B = Normale

**Pressione/depressione del vento e coefficienti**

Altezza	Area	$C_{pe}$	$C_{pi}$	$W_e$	$W_i$
0,000 m - 25,000 m	Lato	1,00	-1,40	1,068 kN/m <sup>2</sup>	-1,495 kN/m <sup>2</sup>
0,000 m - 25,000 m	Normale	1,00	-1,10	1,068 kN/m <sup>2</sup>	-1,175 kN/m <sup>2</sup>

**Carico vento (sistema)**

Altezza	Area	Punto fisso		Punto scorrevole	
		$w_e$	$w_i$	$w_e$	$w_i$
0,000 m - 25,000 m	Lato	0,534 kN/m	-0,748 kN/m	0,534 kN/m	-0,748 kN/m
0,000 m - 25,000 m	Normale	0,534 kN/m	-0,587 kN/m	0,534 kN/m	-0,587 kN/m

**2.2 Peso proprio**

Peso della facciata, Carico: 12,000 kg/m<sup>2</sup>, 0,118 kN/m<sup>2</sup>

Larghezza di influenza (Peso proprio), Carico (sistema): 500,0 mm, 0,059 kN/m

Profilo 1: 0,005 kN/m

**3. Sistema statico e calcolo di reazioni vincolari, forze di sezione, spostamenti**

Nota: i calcoli statici sono compiuti considerando un carico unitario uniformemente distribuito (peso proprio, pressione e depressione). I carichi di progetto utilizzati per le diverse procedure di dimensionamento sono valutati utilizzando il principio di sovrapposizione degli effetti (calcolo elastico-lineare)

**3.1 Sistema statico Punto fisso - Pressione/depressione del vento, [mm]**

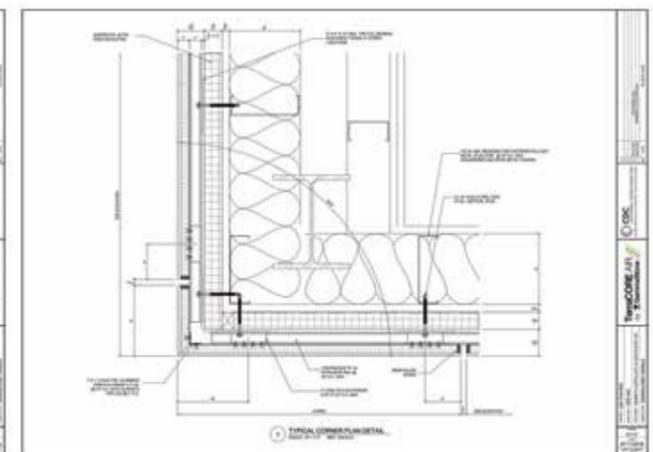
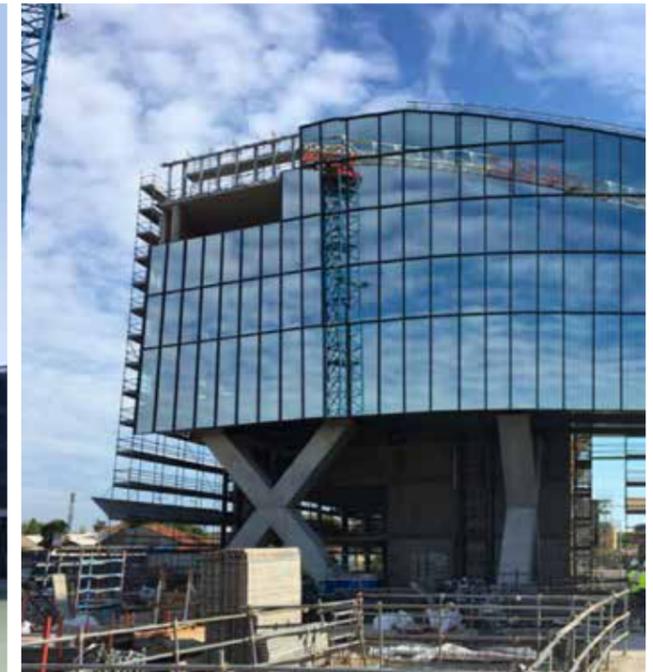
**3.1.1 Distribuzione delle forze di taglio (V), momenti flettenti (M), deformazioni (f) per carico unitario: Pressione/depressione del vento (per il caso di pressione: moltiplicare i valori per -1)**

**3.1.2 Reazioni vincolari massime/minime, momenti flettenti, deformazioni per carico unitario: Pressione/depressione del vento (per il caso di pressione: moltiplicare i valori per -1)**

Massima reazione all'appoggio  $R_s = -0,52502$  kN      Massimo momento in campata  $M_c = 12,51$  Nm

Massima freccia  $f_{max} = 0,187741$  mm      Massimo momento sull'appoggio  $M_s = -31,25$  Nm

Gammastone has developed an exceptional working relationship with many architectural firms around the world. Based on our reputation experience and expertise in exterior building façade systems. Owners and Architects routinely engage Gammastone early in the design of a project. This collaboration from the start of the design process helps eliminating problems before they become issues in construction.





# INSTALLATION

Installing the GammaStone façades is extremely simple and safe. Thanks to the collaboration of leading companies in the production of anchorage systems that are already of well-known and tested anchorage systems. The fitter is equipped with all specific indications for installation. Thanks also to the extremely reduced weight of the panels, installing is easier than with other ventilated façade solutions.



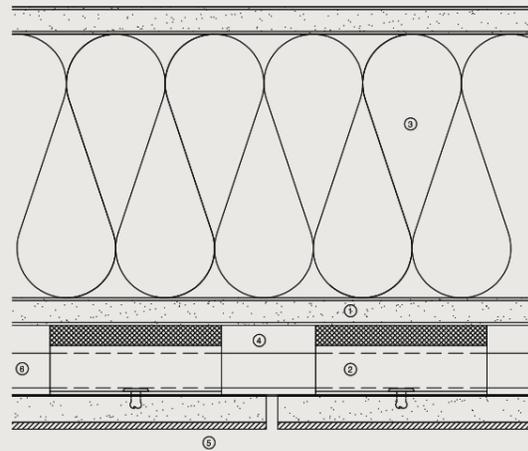


# GAMMASTONE AIR HAS SUCCESSFULLY PASSED THE FIRE TEST

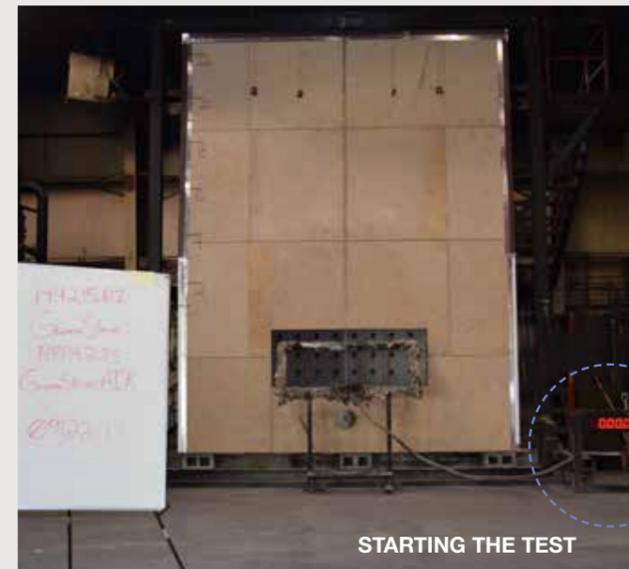
GammaStone AIR panels have passed the two most severe international tests required by the **strict American (NFPA 285) and English (BS8414-1) standards on fire.** GammaStone's commitment to supplying high quality, fully tested ventilated & drained rain screen systems in the US moves forward with the recent passing of NFPA 285, a strict American test complying with fire regulation of exterior panels installed on building facades. **This confirms the beauty of Natural Stone and many other materials offered by GammaStone can be installed on building facades safely with no restrictions.**

The BS8414-1 test is by far the most severe in the world made on panels for cladding buildings. Our material was installed on a concrete structure using the aluminum anchoring system of ventilated facades. The surface of over 30sqm, which reached 8.5m in height, was subjected to the flames emitted by a 2m combustion chamber obtained at the base of the wall itself. The "fire test" lasts a total of 60 minutes, of which the first 30 minutes is direct exposure to the flame. This test is considered fundamental for the use of building materials in UK, Middle East, Australia and New Zealand.

- 1) Basement
- 2) Hanger
- 3) Insulation
- 4) Ventilation
- 5) GammaStone AIR
- 6) Horiz. Profile



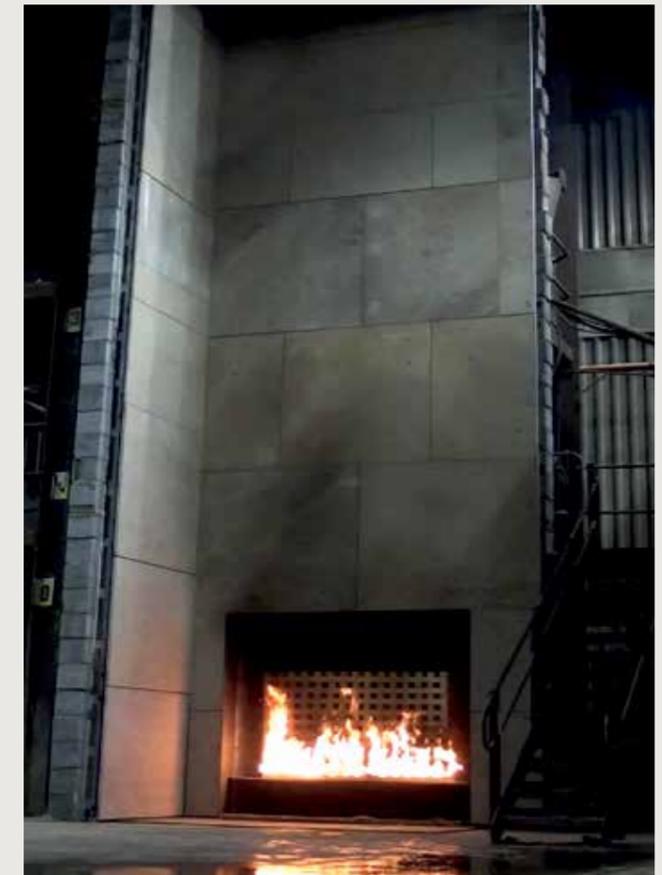
Gammastone Air test wall under construction



Gammastone Air Wall Assembly



Reaction to fire of **Gammastone Air** wall assembly after 28'32" of direct flame exposure



Gammastone Air Wall Assembly



Reaction to fire of **Gammastone Air** wall assembly after 28'32" of direct flame exposure

# INTERTEK APPROVED

## ABOUT INTERTEK

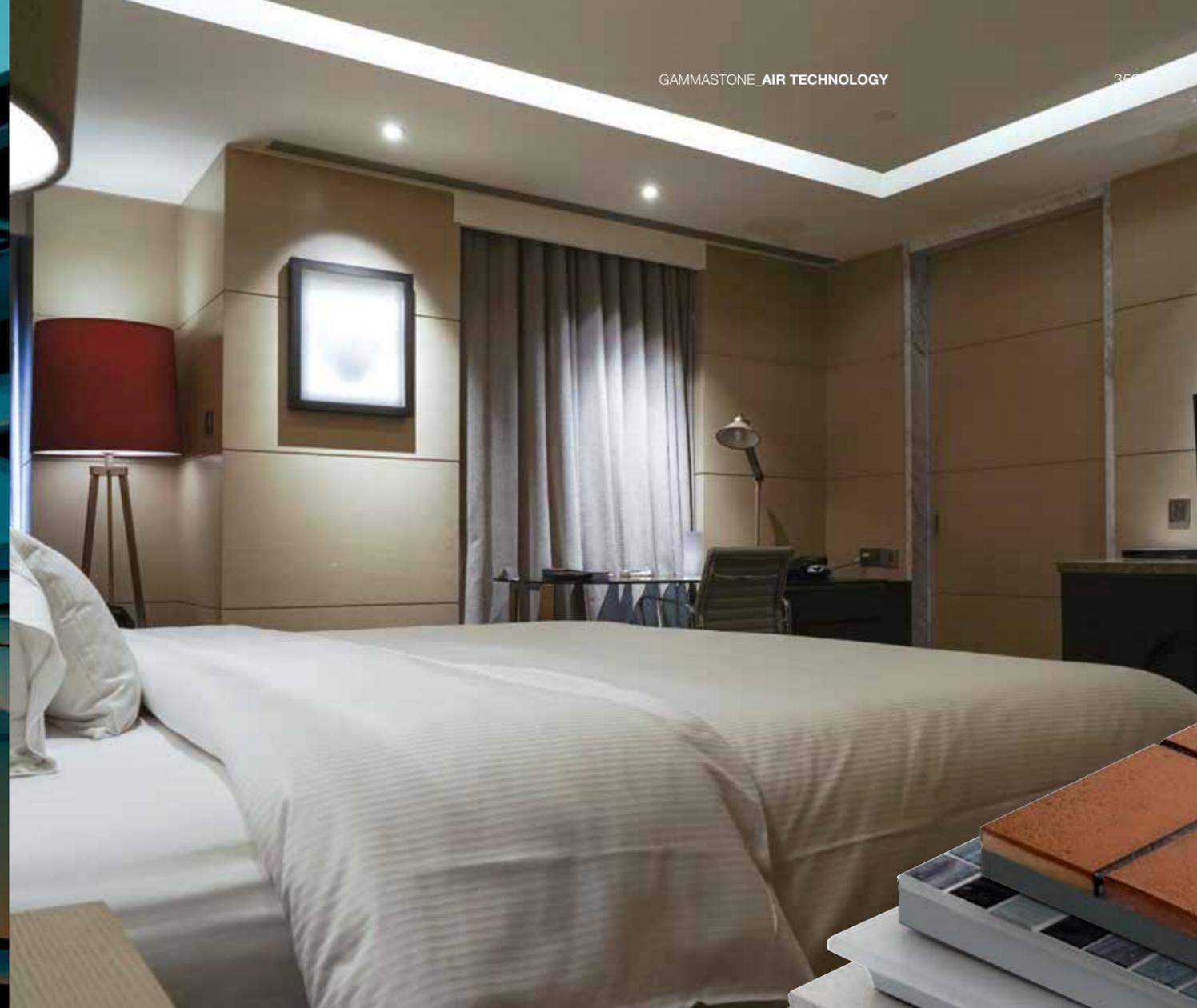
Intertek Total Quality Assurance expertise, delivered consistently with precision, pace and passion, enabling our customers to power ahead safely. We go beyond testing, inspecting and certifying products; we are a Total Quality Assurance provider to industries worldwide. Through our global network of state-of-the-art facilities and industry-leading technical expertise we provide innovative and bespoke Assurance, Testing, Inspection and Certification services to customers. We provide a systemic approach to supporting our customers' Quality Assurance efforts in each of the areas of their operations including R&D, raw materials sourcing, components suppliers, manufacturing, transportation, distribution and retail channels, and consumer management. Intertek is an industry leader with more than 44,000 employees in 1,000 locations in over 100 countries. We deliver Total Quality Assurance expertise 24 hours a day, 7 days a week with our industry-winning processes and customer-centric culture. Whether your business is local or global, we can help to ensure that your products meet quality, health, environmental, safety, and social accountability standards for virtually any market around the world. We hold extensive global accreditations, recognitions, and agreements, and our knowledge of and expertise in overcoming regulatory, market, and supply chain hurdles is unrivalled.

Intertek can sharpen your competitive edge

- With reliable testing and certification for faster regulatory approval
- Through rapid, efficient entry to virtually any market in the world
- With Total Quality Assurance across your supply chain
- Through innovative leadership in meeting social accountability standards
- By reducing cost and minimizing health, safety, and security risks
- By becoming a TRUSTED BRAND

For more than 130 years, companies around the world have depended on Intertek to help ensure the quality and safety of their products, processes and systems.





# WE HAVE OBTAINED THE RINA CERTIFICATION

GammaStone AIR panels fully meet the requirements of the **IMO FTP CODE 2010**. The purpose of the test was to determine the flammability of the material under examination and to determine its calorific value, fully demonstrating that the GammaStone AIR panels comply with the increasingly stringent regulations of the naval field. Specifically, **THE ULTRALIGHT GAMMASTONE AIR PANELS CAN BE USED FOR INTERIOR CLADDING AND FINISHING MATERIAL FOR DIVIDING WALLS AND CEILINGS, RAISED FLOORS, CABINS, CORRIDORS, HALLS**. The large selection of marble, granite, travertine, stone and many other prestigious materials and above all the various processes permitted, help us satisfy the most sophisticated needs of the project and allow the placement of our GAMMASTONE AIR panels on **LUXURY YACHTS AND CRUISE SHIPS** enhancing the furnishing elements. GammaStone is once again an unrivaled choice of style and elegance.



**GammaStone AIR has obtained the rigorous Rina naval certification for the installation on ships of ultralight and large-format GammaStone AIR panels. The untiring commitment and dedication to the creation of the highest quality products has allowed GammaStone to obtain the RINA IMO MED certification.**

# PARTNERS



**ADI** ADI ASSOCIAZIONE  
PER IL DISEGNO  
INDUSTRIALE



**intertek**  
Total Quality. Assured.



GAMMASTONE GRES AIR by GammaStone is the winner of the 2018 edition of the **Archiproducts Design Awards**, in the Components and Materials category! Snapshot of the excellences of international design, the ADA spotlight the most virtuous cooperations between brands and designers, and the innovations of their products as well, celebrating the successful results that today are writing new chapters in the history of architecture and design.

It was awarded because of technical quality and function, functionality and operability and sustainability and ecological quality.

GammaStone is a member of **UNICMI** (National Union of Industries of the Metalworks, Envelope and Windows) whose aim is to represent the interests of Italian industrial sectors of the building envelope and metalworks to all institutions, and to promote its products on the market.

All GammaStone products are certified, through rigorous tests at the special test stations of **Istituto Giordano**, technical institute for product test, certification, research, design and training with awards and ministerial authorizations. Our systems have obtained multiple certifications including corrosion resistance, acoustic insulation, wind resistance (pressure and depression), impact, thermal and fire resistance.

GammaStone products are manufactured in compliance with the strict requirements of **EOTA** (European Organization for Technical Approvals) primary organization for the technical evaluation of construction products.

The company is certified **ISO 9001** by **IMQ** the most important Italian certification institution, leader in Europe in evaluation of Compliance (safety, quality, sus-

tainability) in Italy and abroad, distinctive element of the made in Italy production. GammaStone AIR panels are designed in collaboration with the **CNR National Research Council**. It is the largest public research institute with high competence technical scientific, supervised by the Minister Education, University and Research (MIUR) that value the Research and implementation of their results for the technological development of our country.

GammaStone panels are certified at international level by **BBA**, leader of certification bodies in the construction sector in Great Britain, ensuring high safety and reliability.

GammaStone panels are selected for their originality, innovation and functionality by ADI GammaStone obtained important awards for the protection of the Intellectual property.

# TECHNICAL DATA SHEET

## GAMMASTONE GRES AIR

TEST	DESCRIPTION	RESULT
UNI EN ISO 10545-3:2000	Determination of water absorption	0,9%
UNI EN 12089:2013	Determination of bending behavior	27772 kPa
UNI EN ISO 10545-12:2000	Determination of frost resistance	No fault
UNI EN 12664:2002	Thermal resistance	0,237 m <sup>2</sup> K/W
UNI 9177:2008 UNI 8457:2010 UNI 9174:2010	Reaction to fire	Classe 1
UNI EN 13501-1:2009 UNI EN 13823:2010 UNI EN ISO 11925-2:2005	Fire classification	B - s1, d0
UNI EN 826:2013	Determination of compression behavior	1377 kPa
UNI EN ISO 9142:2004	Accelerated ageing	No fault
UNI EN ISO 9227:2012	Resistance in Neutral Salt Spray NSS	No fault
UNI EN ISO 10545-9:2013	Thermal shock resistance	No fault
UNI EN 772-14:2003	Determination of moisture movement	0.0 mm/m
UNI EN 14019:2004 ETAG 034-1:2012	Impact resistance	No damage
ETAG 004:2013	Heat-Rain 80 cycles and Heat-Cold 5 cycles resistance	No fault
UNI EN ISO 10545-8:2014	Determination of linear thermal expansion	2.1 (<0.1 mm/600 mm)
UNI EN ISO 10545-4:2012	Determination of the breaking strength	22.9 ± 1.7 N/mm <sup>2</sup>
UNI EN ISO 10545-4:2012	Flexure after Heat-Rain 80 cycles + Heat-Cold 5 cycles	23.2 ± 3.0 N/mm <sup>2</sup>



TEST	DESCRIPTION	RESULT
Rif. Test Certimac POI	Determination of bond strength by pull-off	1.63 ± 0.20 N/mm <sup>2</sup>
Rif. Test Certimac POI	Bond strength after Heat-Rain 80 cycles + Heat-Cold 5 cycles	1.42 ± 0.25 N/mm <sup>2</sup>
Rif. Test Certimac POI	Bond strength after water immersion (21 days)	1.01 ± 0.27 N/mm <sup>2</sup>
ETAG 034-1:2012	Wind depression load resistance	4610 Pa
ASTM E 84 (UL 723)	Surface burning characteristics	Class A
ASTM E 136	Behavior of materials at 750°C (1382°F)	Non-combustible
CAN/ULC-S114 ASTM E1530:2006	Test for Non-Combustibility	Non-combustible
ASTM C297/C297M - 16	Standard Test Method for Flatwise Tensile Strength	1,37 ± 0,05 MPa
NFPA 285	Fire test	Passed
BS8414-1	Fire test	Passed
MED 2014/90/EU	Determination of calorific value	Passed
MED 2014/90/EU	Determination of the limited ability to propagate the flame	Passed

The tests refer to a GammaStone AIR Gres panel with 3 mm thick ceramic tile.

Certification information can be found on [www.gammastone.com](http://www.gammastone.com)

# TECHNICAL DATA SHEET

## GAMMASTONE NATURAL AIR



TEST	DESCRIPTION	RESULT
ETAG 004:2013	Heat-Rain 80 cycles	No fault
ETAG 004:2013	Heat-Cold 5 cycles	No fault
UNI EN ISO 10545-8:2014	Determination of linear thermal expansion	6.6* (<0.3 mm/600 mm)
UNI EN 772-14:2003	Determination of moisture movement	0.4 mm/m
UNI 9177:2008 UNI 8457:2010 UNI 9174:2010	Reaction to fire	Classe 1
UNI EN 13501-1:2009 UNI EN 13823:2010 UNI EN ISO 11925-2:2005	Fire classification	B - s1, d0
UNI EN ISO 10545-4:2012	Determination of modulus of rupture and breaking strength	2.8± 0.3 N/mm <sup>2</sup>
UNI EN ISO 10545-4:2012	Breaking strength Heat-Rain 80 cycles + Heat-Cold 5 cycles	5.0± 0.5 N/mm <sup>2</sup>
Rif. Test Certimac POI	Determination of bond strength by pull-off	1.15 ± 0.26 N/mm <sup>2</sup>
Rif. Test Certimac POI	Bond strength after Heat-Rain 80 cycles + Heat-Cold 5 cycles	1.01 ± 0.31 N/mm <sup>2</sup>
Rif. Test Certimac POI	Limit of detachment after water immersion (21 days)	0.27 ± 0.17 N/mm <sup>2</sup>
UNI EN ISO 10545-3:2000	Determination of water absorption	6%*
UNI EN ISO 10545-9:2013	Determination of resistance to thermal shock	No fault
UNI EN ISO 10545-12:2000	Determination of frost resistance	No fault
ETAG 034-1:2012	Wind depression load resistance	4610 Pa
UNI EN 12664:2002	Determination of thermal conductivity	0.157 ÷ 0.170 W/mK
ASTM E 84 (UL 723)	Surface burning characteristics	Class A

TEST	DESCRIPTION	RESULT
ASTM E 136	Behavior of materials at 750°C (1382°F)	Non-combustible
CAN/ULC-S114 ASTM E1530:2006	Test for Non-Combustibility	Non-combustible
ASTM C297/C297M-16	Standard Test Method for Flatwise Tensile Strength	1,37 ± 0,05 MPa
NFPA 285	Fire test	Passed
BS8414-1	Fire test	Passed
MED 2014/90/EU	Determination of calorific value	Passed
MED 2014/90/EU	Determination of the limited ability to propagate the flame	Passed
ASTM C393/C393M-16	Core Shear Properties (Negative Windload - Machine Direction)	102,4 psi
	Core Shear Properties (Positive Windload)	18,7 psi
	Core Shear Properties (Negative Windload - Crosswise Direction)	100,2 psi
ASTM C272/C272M-18	Water Absorption of Core Materials	6,143 ibm/ft <sup>3</sup>
	Flatwise Tensile Bond Strength Evaluation (Fiberglass Mesh)	359 psi
ASTM C297/C297M-16	Flatwise Tensile Bond Strength Evaluation (Foam Core)	190 psi
	Flatwise Tensile Bond Strength Evaluation (Steel)	57,6 psi
	Flexural Strength Evaluation (Negative Windload - Dry Condition) Initial Failure	1.043 psi
ASTM C880/C880M-18	Flexural Strength Evaluation (Negative Windload - Dry Condition) Ultimate Failure	2.932 psi
	Flexural Strength Evaluation (Positive Windload - Dry Condition)	2.787 psi
	Flexural Strength Evaluation (Negative Windload - Wet Condition)	891 psi
	Flexural Strength Evaluation (Positive Windload - Wet Condition)	2.903 psi
ASTM C482-02	Bond Strength Mitered Corner Joint Assembly Shear Loading Evaluation	992,4 lb <sub>f</sub>
AS/NZS 1530	Determination of ignitability, flame-propagation, heat release and smoke release	Ignitability 0
		Spread of flame 0
		Heat Evolved 0
		Smoke developed 0-1

\* It depends on the type of natural stone, the lower value refers to the Travertine, the highest value is for Sandstone. The results are based on tests made on a GammaStone Natural AIR panel in natural untreated stone type Sandstone saw finishing.

Certification information can be found on [www.gammastone.com](http://www.gammastone.com)

# TECHNICAL DATA SHEET

## GAMMASTONE GLASS AIR



TEST	DESCRIPTION	RESULT
UNI EN 12089:2013	Determination of bending behavior	84053 kPa
UNI EN 13049:2004	Determination of impact strength	No damage
UNI 9177:2008 UNI 8457:2010 UNI 9174:2010	Reaction to fire	Classe 1
UNI EN 13501-1:2009	Fire classification - glass side	B - s2, d0
UNI EN 13501-1:2009 UNI EN 13823:2010 UNI EN ISO 11925-2:2005	Fire classification - steel side	B - s1, d0
UNI EN 826:2013	Determination of compression behavior	2135 kPa
ETAG 004:2013	Heat-Rain 80 cycles and Heat-Cold 5 cycles	No fault
UNI EN ISO 10545-8:2014	Determination of linear thermal expansion	4.2 (<0.2 mm/600 mm)
UNI EN 772-14:2003	Determination of moisture movement	0.0 mm/m
UNI EN ISO 10545-4:2012	Determination of modulus of rupture and breaking strength	23.2 ± 0.9 N/mm <sup>2</sup>
UNI EN ISO 10545-4:2012	Breaking strength Heat-Rain 80 cycles + Heat-Cold 5 cycles	23.2 ± 0.9 N/mm <sup>2</sup>
Rif. Test Certimac POI	Determination of bond strength by pull-off	1.56 ± 0.19 N/mm <sup>2</sup>
Rif. Test Certimac POI	Bond strength by pull-off results – sample "after immersion" (21 days)	1.24 ± 0.28 N/mm <sup>2</sup>
UNI EN ISO 10545-3:2000	Determination of water absorption	0.2%
UNI EN ISO 10545-9:2013	Determination of resistance to thermal shock	No fault
UNI EN ISO 10545-12:2000	Determination of frost resistance	No fault

TEST	DESCRIPTION	RESULT
ETAG 034-1:2012	Wind depression load resistance	4610 Pa
UNI EN 12664:2002	Determination of thermal conductivity	0.118 ÷ 0.123 W/mK
ASTM E 84 (UL 723)	Surface burning characteristics	Class A
ASTM E 136	Behavior of materials at 750°C (1382°F)	Non-combustible
CAN/ULC-S114 ASTM E1530:2006	Test for Non-Combustibility	Non-combustible
ASTM C297/C297M - 16	Standard Test Method for Flatwise Tensile Strength	1,37 ± 0,05 MPa
NFPA 285	Fire test	Passed
BS8414-1	Fire test	Passed
MED 2014/90/EU	Determination of calorific value	Passed
MED 2014/90/EU	Determination of the limited ability to propagate the flame	Passed

The results are based on tests made on a GammaStone Glass AIR panel in enameled, tempered, black glass thickness 6 mm.

Certification information can be found on [www.gammastone.com](http://www.gammastone.com)

# TECHNICAL DATA SHEET

## GAMMASTONE GFRC PLUS AIR



TEST	DESCRIPTION	RESULT
UNI EN ISO 10545-3:2000	Determination of water absorption	7,2%
UNI EN ISO 10545-8:2014	Determination of linear thermal expansion	1.6
UNI EN 772-14:2003	Determination of moisture movement	0.04 ÷ 0.13 mm/m
UNI EN ISO 10545-4:2012 UNI EN 12467:2016	Determination of the breaking strength	4.3 ÷ 6.2 N/mm <sup>2</sup> 2.9 ÷ 3.9 N/mm <sup>2</sup>
UNI EN 12089:2013	Determination of bending behavior	4160 ÷ 5867 kPa
UNI EN 12467:2016	Determination of frost/defrost resistance	No fault
UNI EN 12467:2016	Determination of water absorption	Absence of water
UNI EN ISO 10545-9:2013	Determination of resistance to thermal shock	No fault
UNI 9177:2008 UNI 8457:2010 UNI 9174:2010	Reaction to fire	Classe 1
UNI EN 13501-1:2009 UNI EN 13823:2010 UNI EN ISO 11925-2:2005	Fire classification	B - s1, d0
ETAG 034-1:2012	Wind depression load resistance	4610 Pa
ASTM E 84 (UL 723)	Surface burning characteristics	Class A
ASTM E 136	Behavior of materials at 750°C (1382°F)	Non-combustible
CAN/ULC-S114 ASTM E1530:2006	Test for Non-Combustibility	Non-combustible
ASTM C297/C297M - 16	Standard Test Method for Flatwise Tensile Strength	1,37 ± 0,05 MPa

TEST	DESCRIPTION	RESULT
NFPA 285	Fire test	Passed
BS8414-1	Fire test	Passed
MED 2014/90/EU	Determination of calorific value	Passed
MED 2014/90/EU	Determination of the limited ability to propagate the flame	Passed

Certification information can be found on the web site [www.gammastone.com](http://www.gammastone.com)

# TECHNICAL DATA SHEET

## GAMMASTONE MOSAIC AIR



TEST	DESCRIPTION	RESULT
UNI EN 12089:2013	Determination of bending behavior	84053 kPa
UNI EN 13049:2004	Determination of impact strength	No damage
UNI 9177:2008 UNI 8457:2010 UNI 9174:2010	Reaction to fire	Classe 1
UNI EN 13501-1:2009	Fire classification - glass side	B - s2, d0
UNI EN 13501-1:2009 UNI EN 13823:2010 UNI EN ISO 11925-2:2005	Fire classification - steel side	B - s1, d0
UNI EN 826:2013	Determination of compression behavior	2135 kPa
ETAG 004:2013	Heat-Rain 80 cycles and Heat-Cold 5 cycles	No fault
UNI EN ISO 10545-8:2014	Determination of linear thermal expansion	4.2 (<0.2 mm/600 mm)
UNI EN 772-14:2003	Determination of moisture movement	0.0 mm/m
UNI EN ISO 10545-4:2012	Determination of modulus of rupture and breaking strength	23.2 ± 0.9 N/mm <sup>2</sup>
UNI EN ISO 10545-4:2012	Breaking strength Heat-Rain 80 cycles + Heat-Cold 5 cycles	23.2 ± 0.9 N/mm <sup>2</sup>
Rif. Test Certimac POI	Determination of bond strength by pull-off	1.56 ± 0.19 N/mm <sup>2</sup>
Rif. Test Certimac POI	Bond strength by pull-off results – sample "after immersion" (21 days)	1.24 ± 0.28 N/mm <sup>2</sup>
UNI EN ISO 10545-3:2000	Determination of water absorption	0.2%
UNI EN ISO 10545-9:2013	Determination of resistance to thermal shock	No fault
UNI EN ISO 10545-12:2000	Determination of frost resistance	No fault

TEST	DESCRIPTION	RESULT
ETAG 034-1:2012	Wind depression load resistance	4610 Pa
UNI EN 12664:2002	Determination of thermal conductivity	0.118 ÷ 0.123 W/mK
ASTM E 84 (UL 723)	Surface burning characteristics	Class A
ASTM E 136	Behavior of materials at 750°C (1382°F)	Non-combustible
CAN/ULC-S114 ASTM E1530:2006	Test for Non-Combustibility	Non-combustible
ASTM C297/C297M - 16	Standard Test Method for Flatwise Tensile Strength	1,37 ± 0,05 MPa
NFPA 285	Fire test	Passed
BS8414-1	Fire test	Passed
MED 2014/90/EU	Determination of calorific value	Passed
MED 2014/90/EU	Determination of the limited ability to propagate the flame	Passed

The results are based on tests made on a GammaStone Glass AIR panel in enameled, tempered, black glass thickness 6 mm.

Certification information can be found on [www.gammastone.com](http://www.gammastone.com)

# TECHNICAL DATA SHEET

## GAMMASTONE BRICK AIR



TEST	DESCRIPTION	RESULT
UNI EN ISO 10545-3:2000	Determination of water absorption	0,9%
UNI EN 12089:2013	Determination of bending behavior	27772 kPa
UNI EN ISO 10545-12:2000	Determination of frost resistance	No fault
UNI EN 12664:2002	Thermal resistance	0,237 m <sup>2</sup> K/W
UNI 9177:2008 UNI 8457:2010 UNI 9174:2010	Reaction to fire	Classe 1
UNI EN 13501-1:2009 UNI EN 13823:2010 UNI EN ISO 11925-2:2005	Fire classification	B - s1, d0
UNI EN 826:2013	Determination of compression behavior	1377 kPa
UNI EN ISO 9142:2004	Accelerated ageing	No fault
UNI EN ISO 9227:2012	Resistance in Neutral Salt Spray NSS	No fault
UNI EN ISO 10545-9:2013	Thermal shock resistance	No fault
UNI EN 772-14:2003	Determination of moisture movement	0.0 mm/m
UNI EN 14019:2004 ETAG 034-1:2012	Impact resistance	No damage
ETAG 004:2013	Heat-Rain 80 cycles and Heat-Cold 5 cycles resistance	No fault
UNI EN ISO 10545-8:2014	Determination of linear thermal expansion	2.1 (<0.1 mm/600 mm)
UNI EN ISO 10545-4:2012	Determination of the breaking strength	22.9 ± 1.7 N/mm <sup>2</sup>
UNI EN ISO 10545-4:2012	Flexure after Heat-Rain 80 cycles + Heat-Cold 5 cycles	23.2 ± 3.0 N/mm <sup>2</sup>
Rif. Test Certimac POI	Determination of bond strength by pull-off	1.63 ± 0.20 N/mm <sup>2</sup>
Rif. Test Certimac POI	Bond strength after Heat-Rain 80 cycles + Heat-Cold 5 cycles	1.42 ± 0.25 N/mm <sup>2</sup>
Rif. Test Certimac POI	Bond strength after water immersion (21 days)	1.01 ± 0.27 N/mm <sup>2</sup>
ETAG 034-1:2012	Wind depression load resistance	4610 Pa

TEST	DESCRIPTION	RESULT
ASTM E 84 (UL 723)	Surface burning characteristics	Class A
ASTM E 136	Behavior of materials at 750°C (1382°F)	Non-combustible
CAN/ULC-S114 ASTM E1530:2006	Test for Non-Combustibility	Non-combustible
ASTM C297/C297M - 16	Standard Test Method for Flatwise Tensile Strength	1,37 ± 0,05 MPa
NFPA 285	Fire test	Passed
BS8414-1	Fire test	Passed
MED 2014/90/EU	Determination of calorific value	Passed
MED 2014/90/EU	Determination of the limited ability to propagate the flame	Passed
ASTM C67/C67M-18	Freeze-Thaw Cycling Resistance Evaluation (Continued) MASS CHANGE	0,16 %
ASTM C273/C273M-18	Shear - Calculated Results	902,0 psi
	Shear - Calculated Results (C481 Aged)	1.040,50 psi
ASTM C364/C364M-16	Edgewise Compressive Strength	3.397 psi
	Edgewise Compressive Strength (C481 Aged)	3.686 psi
ASTM C365/C365M-16	Flatwise Compressive Strength	948 psi
	Flatwise Compressive Strength (C481 Aged)	1.883 psi
ASTM C297/C297M-16	Flatwise Tensile Bond Strength Evaluation	91,4 psi
	Flatwise Tensile Bond Strength Evaluation (C481 Aged)	88,5 psi
ASTM C393/C393M-16	Results (Control - Lengthwise Production)	300,3 psi
	Results (Control - Crosswise Production)	249,8 psi
	Results (C481 Aged - Lengthwise Production)	306,0 psi
	Results (C481 Aged - Crosswise Production)	237,4 psi
ASTM D1781-98 (2012)	Climbing Drum Peel Strength	140,61 lb <sub>f</sub>
	Climbing Drum Peel Strength (C481 Aged)	120,24 lb <sub>f</sub>
ASTM G154-16	UV Exposure/ D2244 Color Shift Evaluation	0,78 ΔE
	UV Exposure/ D2244 Color Shift Evaluation (Grout)	0,92 ΔE
AS/NZS 1530	Determination of ignitability, flame-propagation, heat release and smoke release	Ignitability 0
		Spread of flame 0
		Heat Evolved 0
		Smoke developed 0-1

The tests refer to a GammaStone AIR Gres panel with 3 mm thick ceramic tile.

Certification information can be found on [www.gammastone.com](http://www.gammastone.com)

# PANELS & MOCK-UP

**At the request of architects, planners, designers we can supply samples of any material: marble, stone, porcelain, glass, realizing monolithic corners or mock-up to reproduce the idea of some details of the project.**



GammaStone Natural AIR Panel Material: Jura Beige, ribbed finish, thickness 10 mm.



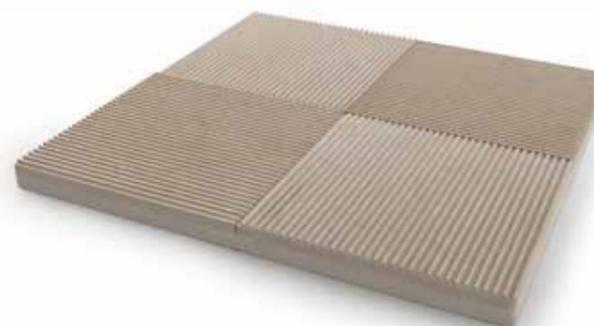
GammaStone Natural AIR Peperino. Bush hammered finish and polished.



GammaStone GFRC Plus AIR Grey. Smooth and rough finish.



Inclined monolithic column GammaStone Natural AIR in Roman Travertine, grouted with transparent resin, 120 grain finish



GammaStone Natural AIR Panel Material: Jura Beige, ribbed finish, thickness 10 mm.



GammaStone Gres AIR panel with milled of different widths on the surface



GammaStone Gres AIR Panels with a "closed joint" system



GammaStone Brick AIR Panels and monolithic soffit in GammaStone Natural AIR in roman travertine



GammaStone Gres AIR with slots and holes



Display systems with concealed fastening for GammaStone AIR panel



# SAMPLE BOX

At the request of architects, planners, designers we can supply samples of any material: marble, stone, porcelain, glass, realizing monolithic corners or mock-up to reproduce the idea of some details of the project



# PANEL SPECIFICATION

## CERAMIC PANEL

The façade cladding has to be made with light-weight panels (type GammaStone AIR or similar) made of an external layer in porcelain gres slabs thick 3, 5 or 6 mm, a structural core inserted between two fiberglass mattings and a stainless steel plate having a thickness of 0.5 mm.

Sizes: panels provided according to the designer's request with a maximum size of 3200x1500mm.

Thickness: 16 or 17 or 18 mm. Weight: 14 or 19 or 21 kg/sqm

**Porcelain gres monolithic corner** composed of porcelain gres with beveled edges, assembled with mastic, put on the back of a blend L-element and glued with structural silicone.

**The panel has to have the minimum performance levels as follows:**

UNI EN ISO 105453:2000 Determination of water absorption 0,9%

UNI EN 12089:2013 Determination of bending behavior 27772 kPa

UNI EN ISO 1054512:2000 Determination of frost resistance No fault

UNI EN 12664:2002 Thermal resistance 0,237 m2.K/W

UNI 8457:2010 Reaction to fire Classe 1

UNI EN 135011:2009 Fire classification B s1, d0

UNI EN 826:2013 Determination of compression behavior 1377 kPa

UNI EN ISO 9142:2004 Accelerated ageing No fault

UNI EN ISO 9227:2012 Resistance in Neutral Salt Spray NSS No fault

UNI EN ISO 105459:2013 Thermal shock resistance No fault

UNI EN 77214:2003 Determination of moisture movement 0.0 mm/m

UNI EN 14019:2004 ETAG 0341:2012 Impact resistance No damage

ETAG 004:2013 HeatRain 80 cycles and HeatCold 5 cycles resistance No fault

UNI EN ISO 105458:2014 Determination of linear thermal expansion 2.1 (<0.1 mm/600 mm)

UNI EN ISO 105454:2012 Determination of the breaking strength 22.9 ± 1.7 N/mm2

UNI EN ISO 105454:2012 Flexure after HeatRain 80 cycles + HeatCold 5 cycles 23.2 ± 3.0 N/mm2

Determination of bond strength by pulloff 1.63 ± 0.20 N/mm2

Bond strength after HeatRain 80 cycles + HeatCold 5 cycles 1.42 ± 0.25 N/mm2

Bond strength after water immersion (21 days) 1.01 ± 0.27 N/mm2

ETAG 0341:2012 Wind depression load resistance 4610 Pa

ASTM E 84 (UL 723) Surface burning characteristics Class A

ASTM E 136 Behavior of materials at 750°C (1382°F) Noncombustible

CAN/ULCS114 Test for NonCombustibility Noncombustible

ASTM C297/C297M-16 Standard Test Method for Flatwise Tensile Strength 1,37 ± 0,05 MPa

NFPA Fire test Passed

BS8414-1 Fire test Passed

## NATURAL STONE PANEL

The façade cladding has to be made with light-weight panels (type GammaStone AIR or similar) made of an external layer in "stone name" slabs thick 5, 10 or 12 mm, a structural core inserted between two fiberglass mattings and a stainless steel plate having a thickness of 0,5 mm.

Sizes: panels provided according to the designer's request with a maximum size of 3200x1500mm.

Thickness: 17 or 22 or 24 mm. Weight: 18 or 30 or 36 kg/sqm

**Natural stone monolithic corner** composed of stone slabs with beveled edges, assembled with mastic, put on the back of a blend L-element and glued with structural silicone.

**The panel has to have the minimum performance levels as follows:**

ETAG 004:2013 HeatRain 80 cycles No fault

ETAG 004:2013 HeatCold 5 cycles No fault

UNI EN ISO 105458:2014 Determination of linear thermal expansion 6.6 (<0.3 mm/600 mm)

UNI EN 77214:2003 Determination of moisture movement 0.4 mm/m

UNI 9177:2008 UNI 8457:2010 Reaction to fire Classe 1

UNI EN 135011:2009 Fire classification B s1, d0

UNI EN ISO 105454:2012 Determination of modulus of rupture and breaking strength 2.8± 0.3 N/mm2

UNI EN ISO 105454:2012 Breaking strength HeatRain 80 cycles + HeatCold 5 cycles 5.0± 0.5 N/mm2

Determination of bond strength by pulloff 1.15 ± 0.26 N/mm2

Bond strength after HeatRain 80 cycles + HeatCold 5 cycles 1.01 ± 0.31 N/mm2

Limit of detachment after water immersion (21 days) 0.27 ± 0.17 N/mm2

UNI EN ISO 105453:2000 Determination of water absorption 6%\*

UNI EN ISO 105459:2013 Determination of resistance to thermal shock No fault

UNI EN ISO 1054512:2000 Determination of frost resistance No fault

ETAG 0341:2012 Wind depression load resistance 4610 Pa

UNI EN 12664:2002 ASTM E1530:2006 Determination of thermal conductivity 0.157 ÷ 0.170 W/mK

ASTM E 84 (UL 723) Surface burning characteristics Class A

ASTM E 136 Behavior of materials at 750°C (1382°F) Non combustible

CAN/ULCS114 Test for NonCombustibility Non combustible

ASTM C297/C297M-16 Standard Test Method for Flatwise Tensile Strength 1,37 ± 0,05 MPa

NFPA Fire test Passed

BS8414-1 Fire test Passed

## GLASS PANEL

The façade cladding has to be made with light-weight panels (type GammaStone AIR or similar) made of an external layer in back lacquered glass slabs Ral xxxx thick 4 or 6 mm, a structural core inserted between two fiberglass mattings and a stainless steel plate having a thickness of 0,5 mm.

Glass type: Light or Extra light, tempered or not

Sizes: panels provided according to the designer's request with a maximum size of 4200x1500mm.

Thickness: 16 or 18 mm. Weight: 16 or 21 kg/sqm

**Glass monolithic corner** composed of glass slabs with beveled edges, assembled with mastic, put on the back of a blend L-element and glued with structural silicone.

**The panel has to have the minimum performance levels as follows:**

UNI EN 12089:2013 Determination of bending behavior 84053 kPa

UNI EN 13049:2004 Determination of impact strength No damage

UNI 8457:2010 Reaction to fire Classe 1

UNI EN 135011:2009 Fire classification glass side B s2, d0

UNI EN 135011:2009 Fire classification steel side B s1, d0

UNI EN 826:2013 Determination of compression behavior 2135 kPa

ETAG 004:2013 HeatRain 80 cycles and HeatCold 5 cycles No fault

UNI EN ISO 105458:2014 Determination of linear thermal expansion 4.2 (<0.2 mm/600 mm)

UNI EN 77214:2003 Determination of moisture movement 0.0 mm/m

UNI EN ISO 105454:2012 Determination of modulus of rupture and breaking strength 23.2 ± 0.9 N/mm2

UNI EN ISO 105454:2012 Breaking strength HeatRain 80 cycles + HeatCold 5 cycles 23.2 ± 0.9 N/mm2

Determination of bond strength by pulloff 1.56 ± 0.19 N/mm2

Bond strength by pulloff results – sample "after immersion" (21 days) 1.24 ± 0.28 N/mm2

UNI EN ISO 105453:2000 Determination of water absorption 0.2%

UNI EN ISO 105459:2013 Determination of resistance to thermal shock No fault

UNI EN ISO 1054512:2000 Determination of frost resistance No fault

ETAG 0341:2012 Wind depression load resistance 4610 Pa

UNI EN 12664:2002 Determination of thermal conductivity 0.118 ÷ 0.123 W/mK

ASTM E1530:2006

ASTM E 84 (UL 723) Surface burning characteristics Class A

ASTM E 136 Behavior of materials at 750°C (1382°F) Non combustible

CAN/ULCS114 Test for NonCombustibility Non combustible

ASTM C297/C297M-16 Standard Test Method for Flatwise Tensile Strength 1,37 ± 0,05 MPa

NFPA Fire test Passed

BS8414-1 Fire test Passed

## GFRC PLUS PANEL

The façade cladding has to be made with light-weight panels (type GammaStone AIR or similar) made of an external layer in high-performance concrete reinforced with amorphous metal fibers thick 5 mm, a structural core inserted between two fiberglass mattings and a stainless steel plate having a thickness of 0,5 mm.

Panel color: xxx Finish: xxx

Sizes: panels provided according to the designer's request with a maximum size of 3200x1500mm.

Thickness: 17 mm. Weight: 18 kg/sqm

**Mortar monolithic corner** composed of mortar slabs with beveled edges, assembled with mastic, put on the back of a blend L-element and glued with structural silicone.

**The panel has to have the minimum performance levels as follows:**

UNI EN ISO 10545-3:2000 Determination of water absorption 7,2%

UNI EN ISO 10545-8:2014 Determination of linear thermal expansion 1.6

UNI EN 772-14:2003 Determination of moisture movement 0.04 ÷ 0.13 mm/m

UNI EN ISO 10545-4:2012 UNI EN 12467:2016 Determination of the breaking strength 4.3 ÷ 6.2 N/mm2 2.9 ÷ 3.9 N/mm2

UNI EN 12089:2013 Determination of bending behavior 4160 ÷ 5867 kPa

UNI EN 12467:2016 Determination of frost/defrost resistance No fault

UNI EN 12467:2016 Determination of water absorption absence of water

UNI EN ISO 10545-9:2013 Determination of resistance to thermal shock No fault

UNI 9177:2008UNI 8457:2010 UNI 9174:2010 Reaction to fire Classe 1

UNI EN 13501-1:2009 UNI EN 13823:2010 UNI EN ISO 11925-2:2005 Fire classification B - s1, d0

ETAG 034-1:2012 Wind depression load resistance 4610 Pa

ASTM E 84 (UL 723) Surface burning characteristics Class A

ASTM E 136 Behavior of materials at 750°C (1382°F) Non-combustible

CAN/ULC-S114 Test for Non-Combustibility Non-combustible

ASTM C297/C297M-16 Standard Test Method for Flatwise Tensile Strength 1,37 ± 0,05 MPa

NFPA Fire test Passed

BS8414-1 Fire test Passed

# PANEL SPECIFICATION

## MOSAIC PANEL

The façade cladding has to be made with lightweight panels (type GammaStone AIR or similar) made of an external layer in mosaic slabs color xxxx thick 4 mm, a structural core inserted between two fiberglass mattings and a stainless steel plate having a thickness of 0,5 mm.

The panel is supplied with epoxy resins color xxx within the joints.

Sizes: panels provided according to the designer's request with a maximum size of 3000x1000mm.

Thickness: 16 mm. Weight: 16 kg/sqm

**Mosaic monolithic corner** composed of mosaics with beveled edges, assembled with mastic, put on the back of a blend L-element and glued with structural silicone.

**The panel has to have the minimum performance levels as follows:**

UNI EN 12089:2013 Determination of bending behavior 84053 kPa

UNI EN 13049:2004 Determination of impact strength No damage

UNI 8457:2010 Reaction to fire Classe 1

UNI EN 135011:2009 Fire classification glass side B s2, d0

UNI EN 135011:2009 Fire classification steel side B s1, d0

UNI EN 826:2013 Determination of compression behavior 2135 kPa

ETAG 004:2013 HeatRain 80 cycles and HeatCold 5 cycles No fault

UNI EN ISO 105458:2014 Determination of linear thermal expansion 4.2 (<0.2 mm/600 mm)

UNI EN 77214:2003 Determination of moisture movement 0.0 mm/m

UNI EN ISO 105454:2012 Determination of modulus of rupture and breaking strength  $23.2 \pm 0.9$  N/mm<sup>2</sup>

UNI EN ISO 105454:2012 Breaking strength HeatRain 80 cycles + HeatCold 5 cycles  $23.2 \pm 0.9$  N/mm<sup>2</sup>

Determination of bond strength by pulloff  $1.56 \pm 0.19$  N/mm<sup>2</sup>

Bond strength by pulloff results – sample “after immersion” (21 days)  $1.24 \pm 0.28$  N/mm<sup>2</sup>

UNI EN ISO 105453:2000 Determination of water absorption 0.2%

UNI EN ISO 105459:2013 Determination of resistance to thermal shock No fault

UNI EN ISO 1054512:2000 Determination of frost resistance No fault

ETAG 0341:2012 Wind depression load resistance 4610 Pa

UNI EN 12664:2002 Determination of thermal conductivity  $0.118 \div 0.123$  W/mK

ASTM E1530:2006

ASTM E 84 (UL 723) Surface burning characteristics Class A

ASTM E 136 Behavior of materials at 750°C (1382°F) Noncombustible

CAN/ULCS114 Test for NonCombustibility Noncombustible

ASTM C297/C297M-16 Standard Test Method for Flatwise Tensile Strength  $1,37 \pm 0,05$  MPa

NFPA Fire test Passed

BS8414-1 Fire test Passed

## BRICK PANEL

The façade cladding has to be made with light-weight panels (type GammaStone AIR or similar) made of an external layer in slabs with porcelain or klinker bricks slabs thick 7 or 10 mm, a structural core inserted between two fiberglass mattings and a stainless steel plate having a thickness of 0,5 mm.

The panel is supplied with mortar color xxx within the joints.

Sizes: panels provided according to the designer's request with a maximum size of 3000x1000mm.

Thickness: 19 mm. Weight: 17 kg/sqm

**Brick monolithic corner** composed of slabs with bricks with beveled edges, assembled with mastic, put on the back of a blend L-element and glued with structural silicone.

**The panel must have the minimum performance levels as follows:**

UNI EN ISO 105453:2000 Determination of water absorption 0,9%

UNI EN 12089:2013 Determination of bending behavior 27772 kPa

UNI EN ISO 1054512:2000 Determination of frost resistance No fault

UNI EN 12664:2002 Thermal resistance 0,237 m<sup>2</sup>.K/W

UNI 8457:2010 Reaction to fire Classe 1

UNI EN 135011:2009 Fire classification B s1, d0

UNI EN 826:2013 Determination of compression behavior 1377 kPa

UNI EN ISO 9142:2004 Accelerated ageing No fault

UNI EN ISO 9227:2012 Resistance in Neutral Salt Spray NSS No fault

UNI EN ISO 105459:2013 Thermal shock resistance No fault

UNI EN 77214:2003 Determination of moisture movement 0.0 mm/m

UNI EN 14019:2004 ETAG 0341:2012 Impact resistance No damage

ETAG 004:2013 HeatRain 80 cycles and HeatCold 5 cycles resistance No fault

UNI EN ISO 105458:2014 Determination of linear thermal expansion 2.1 (<0.1 mm/600 mm)

UNI EN ISO 105454:2012 Determination of the breaking strength  $22.9 \pm 1.7$  N/mm<sup>2</sup>

UNI EN ISO 105454:2012 Flexure after HeatRain 80 cycles + HeatCold 5 cycles  $23.2 \pm 3.0$  N/mm<sup>2</sup>

Determination of bond strength by pulloff  $1.63 \pm 0.20$  N/mm<sup>2</sup>

Bond strength after HeatRain 80 cycles + HeatCold 5 cycles  $1.42 \pm 0.25$  N/mm<sup>2</sup>

Bond strength after water immersion (21 days)  $1.01 \pm 0.27$  N/mm<sup>2</sup>

ETAG 0341:2012 Wind depression load resistance 4610 Pa

ASTM E 84 (UL 723) Surface burning characteristics Class A

ASTM E 136 Behavior of materials at 750°C (1382°F) Noncombustible

CAN/ULCS114 Test for NonCombustibility Noncombustible

ASTM C297/C297M-16 Standard Test Method for Flatwise Tensile Strength  $1,37 \pm 0,05$  MPa

NFPA Fire test Passed

BS8414-1 Fire test Passed

# APPLICATIONS SPECIFICATIONS

## VENTILATED FACADE / INVISIBLE SOLUTION

The GammaStoneAIR ventilated façade with concealed fastening is based on the integrated system between large panels (up to 3x1 m in single panel), insulation board and aluminum structure. The structure consists of profiles and brackets both made from extruded aluminum alloy 6060 in the 6000 series according to UNI EN 573-3, physical condition T6 according to EN 515.

When fixing the mullions to the brackets, pay attention to the profile to be fixed in one point only, leaving freedom of movement in the longitudinal direction in the additional hardware to ensure the appropriate spaces needed for the effect of thermal expansion of the aluminum. Take care that the free space of the joint is at least 1.2 x Ømax (in mm). The safety of the whole system must be guaranteed by appropriate checks in accordance with the applicable regulations (Technical Standards for Construction DM 01/14/08) UNI 11018 and January 2003 on “Coatings and anchoring systems for ventilated facades in mechanical assembly. Instructions the design, execution and maintenance.”

In particular, the system GammaStoneAIR concealed fastening is characterized by:

1) Glass panel: the panel consists of a glass slab with a thickness of 4 or 6 mm a structural core interposed between two glass fiber mats and a stainless steel sheet with a thickness of 0.5 mm.

2) Natural stone panel: the panel consists of a natural stone slab with a thickness of 10 mm, a structural core interposed between two glass fiber mats and a stainless steel sheet with a thickness of 0.5 mm.

3) Porcelain panel: panel consists of a porcelain plate with a thickness of 3 or 6mm, a structural core interposed between two glass fiber mats and a stainless steel sheet with a thickness of 0.5 mm.

a) Format: panels are provided in the format required by the designer with a maximum size of 4200x1500 mm (glass) 3200x1500 (natural stone) 3200x1200mm (porcelain)

4) Substructure: substructure composed by mullions, transoms and brackets all made of extruded aluminum alloy 6063 T6 series, available either in the raw state and with various surface finishes, consisting of:

- Raw Brackets, “L” shaped, fixed by anchors suitably dimensioned and chosen according to the existing masonry;

- Isolator placed between aluminum bracket and masonry;

- Raw “T” Profile (called vertical mullion), fastened on the brackets with rivets (large head, steel / aluminum) in respect of “fixed point” and “sliding point”, as shown by the annexed tables.

- Insulating panel, both rigid or soft, thickness according to the project requirement;

- Slotted horizontal current, fixed to the uprights by means of rivets (large head, steel / aluminum), and

shaped so that the stresses due to wind action result axial to the hangers;

- Aluminum hangers fixed on the GammaStone AIR panel stainless steel sheet with rivets large head, steel / aluminum), and placed according to the geometry shown in the annexed tables.

The panels thus assembled, are hanged on the slotted horizontal guide. The system, by means of millimetric adjusting screws, provides the

possibility to obtain variables joints. The panels will be blocked by the sidescrolling removable locking system.

## PART LIST:

- Aluminum mullions, T shaped;

- “L shaped aluminum brackets;

- Isolator for the interruption of the thermal bridge;

- Anchors suitable for the existing masonry;

- Insulating panel, both rigid or soft, according to the thermal calculations;

- Normalized rivets or self-drilling screws for fixing of mullions, brackets and transoms;

- \_Horizontal aluminum slotted transoms, with particular section , able to receive interlocking special nonoverturning

hangers, fixed to the back face of the panel;

- Regulation hangers, with screws for precision adjustment;

- Simple hangers.



## SECTION 074320 – GAMMASTONE AIR (CHOOSE ONE) [STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC] EXTERIOR COMPOSITE PANELS

### PART 1 – GENERAL

#### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this section.

#### 1.2 SUMMARY

A. Provide all materials and work for this section as indicated on the complete set of drawings and as required for a complete installation. Note that any component listing is primarily for the convenience of the Contractor and that all items shall be provided whether included in this listing or indicated on the plans.

#### 1.3 QUALITY STANDARDS

- A. Provide experienced, well-trained workers competent to complete the work as specified. Fabricator/installer shall be experienced in performing work of similar type and scope.
- B. Provide all components, including related products and accessories, from a single manufacturer. Accessories other than those provided by panel manufacturer shall be approved by panel manufacturer.
- C. Panels shall be installed adhering to [\[ventilated rain screen method per manufacturer's instructions and shall provide unobstructed cavity for continuous air flow\]](#), [\[curtain wall system requirements\]](#).

#### 1.4 SUBMITTALS

- A. Make all submittals as directed in Section \_\_\_\_\_ - SUBMITTALS.
- B. Submit list of materials to be provided for this work; manufacturer's data required to prove compliance with these specifications, manufacturer's installation instructions, shop drawings as required, with complete details and assembly instructions.
- C. Submit samples as required for approval by the Architect
- D. Shop drawings shall be complete with specific instructions for the installation of panels, sub-frame assemblies and other component parts.

#### 1.5 PRECONSTRUCTION AND PREPARATION

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.
- B. Field Measurements: Secure field measurements before preparation of shop drawings and fabrication where possible, for proper fabrication and installation of the work.
- C. Pre-Installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements.

#### 1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver material in manufacturer's original, unopened, undamaged containers with identification labels intact. Materials must be transported flat and kept dry and protected from the elements and handled with care.
- B. Storage and Protection: Materials must be stored flat and kept dry in a warehouse/storage facility or in an area protected from exposure to harmful weather conditions, at temperatures and humidity conditions recommended by the manufacturer.

#### 1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

#### 1.8 WARRANTY

A. Manufacturer's warranty: Submit, for owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

### PART 2 – PRODUCTS

#### 2.1 BASIS OF DESIGN PRODUCT: GAMMASTONE AIR (choose one) [STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC].

A. GAMMASTONE - Exterior grade (CHOOSE ONE) [STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC] composite panels.

1. Manufactured by: GammaStone Via Flaminia 148 00068 Rignano Flaminio (Roma) Italy +39 0761 5051 info@gammastone.com

2. Local Contact: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

#### 2.2 MATERIALS

A. EXTERIOR GRADE (choose one) [STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC] COMPOSITE PANELS:

[NATURAL AIR - The panel is composed of a (select one) [.2 inches, (5mm)], [.39 inches, (10mm)], [.47inches, (12mm)] natural stone slab, a structural core inserted between two fiberglass layers and a stainless steel plate having a thickness of 0.5 mm. The available sizes depend on the block size with a maximum size of 126" x 59" (3200x1500 mm).]

[GRES AIR - GammaStone high quality porcelain gres is a compact ceramic paste, obtained from the process of sintering at temperatures of 1200-1400°C, until reaching a non-porous and waterproof vitrification. The panel is composed of a (select one) [.12 inches, (3mm)], [.20 inches,( 5mm)], [.24inches, (6mm)] porcelain gres slab, a structural core inserted between two fiberglass layers and a stainless steel plate having a thickness of 0,5 mm. Available sizes up to 126" x 63" (3200 mm x 1500 mm) depending on ceramic sheet size.]

[GLASS AIR - The panel is composed of a (select one) [.16 inches, (4mm)], [.24inches,( 6mm)] glass slab, a structural core inserted between two fiberglass matting and a stainless steel plate of 0,5 mm thickness. The float or tempered glass is applied depending on the sizes and required applications. Available sizes up to 165" x 59" (4200x1500 mm)]

[GFRC PLUS AIR - The GammaStone GFRC Plus AIR solution is composed of (select one), [.2 inches, (5mm)], [.67inches, 17mm]] high-performance concrete reinforced with amorphous metal fibers, a structural core inserted between two fiberglass matting and a stainless steel plate of 0.5 mm thickness. The panel offers self-cleaning and photo catalytic characteristics.]

B. TECHNICAL REQUIREMENTS: (choose one) [STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC]

1. SURFACE: Per Architect's selection (choose one: [STONE], [CERAMIC], [GLASS], [GFRC], [BRICK], [MOSAIC])
2. PANEL DIMENSIONS: As indicated on drawings.
3. DIMENSIONAL TOLERANCES: See Data Sheet
4. WEIGHT: (dependent on panel configuration)
5. SURFACE BURNING CHARACTERISTICS: Report on surface burning characteristics determined by ASTM E84 (twenty-five-foot tunnel furnace test method) All panels meets class A, flame spread index 0 - 25 and a smoke developed index of 0 – 450. 6. All GammaStone AIR panels have passed the NFPA 285 in accordance with the International Building Code. 7.All GammaStone AIR panels have been rated as Non-combustible according to the ASTM E 136 test in accordance with the International Building Code. 8. ASTM E 136 tensile strength test 1.37 +- 0.05 M Pa 9. Wind Resistance ETAG – 4610 Pa

#### 2.3 ACCESSORIES

A. Provide trim, gaskets, fasteners and other related accessories recommended by the manufacturer to provide a complete system.

#### 2.4 FABRICATION

A. Fabrication by Panel Manufacturer

### PART 3 – EXECUTION

#### 3.1 INSPECTION

A. Examine alignment of backup structure prior to installing subframe. Do not proceed until all defects are corrected.

#### 3.2 INSTALLATION

- A. Comply with Manufacturer's guidelines for panel installation
- B. Attachment system: GAMMASTONE Hidden fastening [\[Ventilated\]](#), [\[Micro-ventilated\]](#), [\[Curtain wall\]](#),[\[Ceiling\]](#),[\[Sunblades\]](#)
- C. Install panels plumb and level and accurately spaced in accordance with manufacturer's recommendations and approved submittals.
- D. Fasten solid exterior wall panels to supporting substrate with fasteners approved for use with adjoining construction.
- E. Accessory Items: Install corner profiles, gaskets and trim with fasteners and adhesive appropriate for use with adjoining constructions as indicated on drawings and as recommended by manufacturer.

#### 3.3 DAMAGED MATERIAL

A. Repair or replace damaged materials

#### 3.4 CLEANING

- A. Do not use abrasive cleaners or cleaning tools. Dry and wipe down panel sections as work progresses.
- B. Provide final cleaning of the panel system.

#### 3.5 PROTECTION

A. Protect installed product and finished surfaces from damage during construction.

END OF SECTION 074320



#### **GAMMASTONE**

All reproduction and reprocessing rights are reserved. Gammastone reserves the right to perform changes, even without prior notice and at any time, to the features of the products shown in this catalog. Colors and grains are merely indicative.

Graphic & Photos:  
**Studioventuno.eu**  
Civita Castellana (VT) Italy



DOWNLOAD  
THE CATALOG



# GammaStone

Architectural & Design Evolutions

**GAMMASTONE HEADQUARTERS**

Via Flaminia, 148  
00068 Rignano Flaminio (Roma) Italy  
Tel.: +39 0761 5051 Fax: +39 0761 508388  
info@gammastone.com

**GAMMASTONE  
MILAN OFFICE**

Tel.: +39 02 39198813  
milano@gammastone.com

**GAMMASTONE  
UK OFFICE**

Ph. +44 203 9667769  
uk@gammastone.com

**GAMMASTONE  
SPAIN OFFICE**

Ph. +34 93 2712434  
spain@gammastone.com

**GAMMASTONE  
USA OFFICE**

Ph. +1 866 87 42662  
usa@gammastone.com