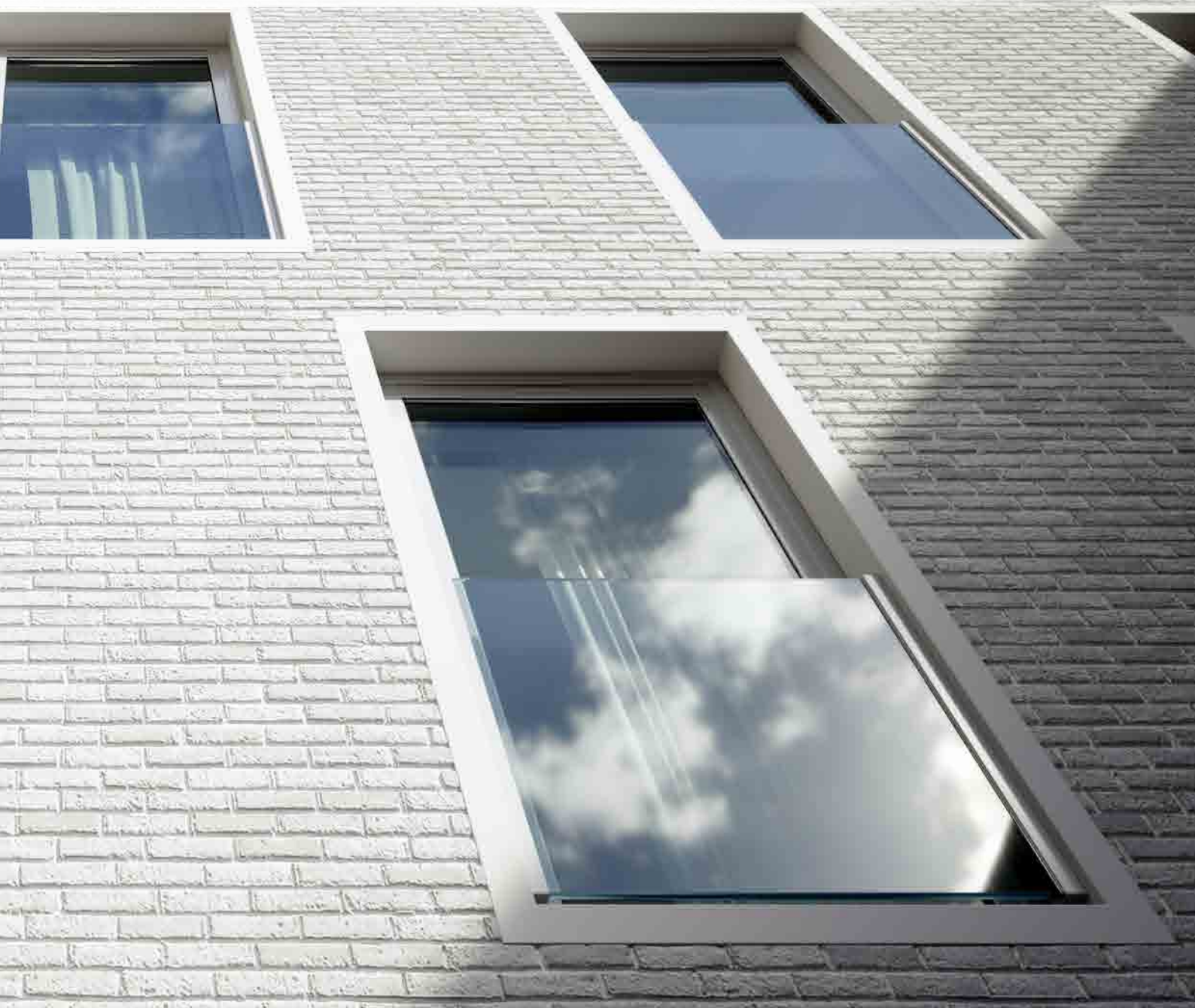
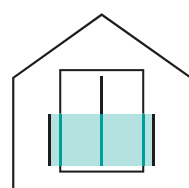


Giulietta®

FRENCH GLASS BALCONY

Italian Design





Giulietta®

FRENCH GLASS BALCONY

Italian Design

PATENTED SYSTEM



ABOUT US

Faraone was founded in 1969 by Sabatino Faraone, currently Chairman, and is now led by CEO Flavio Faraone.

One of the first companies in Italy to embrace the innovative technology of point-fixed glass, Faraone has grown year after year, promptly identifying the trends and needs of contemporary architecture in order to focus its range of **design** products in the best possible way.

After more than 50 years, the company continues to drive innovation in the world of Transparent Architectures in Italy and abroad with its glass balustrades, canopies, facades, doors and partitions.

Thanks to its ability to identify and meet market

needs, Faraone has become a reference point for contemporary glass projects. In the glass balustrade sector in particular, it has installed over 1,600,000 metres (994.2 miles) since 2009.

In 2011, Faraone advanced architecture with the first cantilevered glass canopy, validated by rigorous safety tests. This innovation represented a major step forward in the design and safety of glass structures.

The **company's** research and innovation continue through recurring training courses for **staff**, **partners** and **designers** throughout Italy, with the aim of contributing to synergistic growth for the benefit of the end customer and the entire sector.



Faraone Headquarters, Tortoreto (TE)

+50

EMPLOYEES

+1.500

CUSTOMERS IN THE ITALIAN MARKET

+5.500m²

FACILITY

“

The “French balcony” takes this name precisely because in France, and in European countries in general, it is common to encounter this type of application, typical of that architectural style.

What does it look like? A French balcony is a small balcony that does not protrude beyond the dimensions of the window opening.

Its main characteristic is protective as well as aesthetic. It allows the use of full-height windows and large sliding glass windows in order to make the most of the brightness and space within the room.

In their most classic form, French balconies are often associated with iron balustrades, sometimes very elaborate and decorative.

Today, however, even in this sector we see that glass balustrades are increasingly appreciated for their transparency, aesthetic beauty and safety.

In Italy, too, this type of balcony is gaining ground, especially in large cities where there is a need to optimise space as much as possible, to avoid thermal bridges where not necessary, or simply as an aesthetic choice of the designer.

We are ready to enter this market by offering our version of the French balustrade, paying particular attention to safety, given its essential protective function.

Why Giulietta? Another name often used for the French balcony is the “Juliet balcony”, in reference to the famous balcony of Juliet's House in Verona.

It seemed an appropriate name to us, both to give a clear reference to the product category and to convey its Italian flair.

We therefore welcome Giulietta.

”



Flavio Faraone

Faraone CEO

WHAT YOU NEED TO KNOW ABOUT FRENCH BALCONIES

Did you know that...

The french balcony is not considered a balustrade for all intents and purposes.

The French balcony, in Italy, is still a product under development and has only been on the architectural scene for a few years compared to traditional balustrades.

The latter, in fact, are now widely known, as are the risks associated with decay, improper installation, new non-standard solutions, etc.

The French balcony in these respects still has a long way to go.

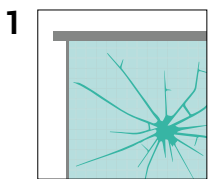
As a result of the growing demand for this type of product, various solutions have appeared, but these are often "handcrafted" from other profiles, not specifically designed for this use or, above all, without any laboratory testing.

There are numerous examples of "minimum safety" not being respected.

Handcrafted French balconies are not as safe as Julietta.

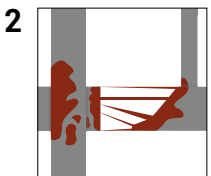


Example of a building with non-standard French balconies with wired glass.



BROKEN GLASS

Damaged wired glass. These types of balustrades are now prohibited by regulations.



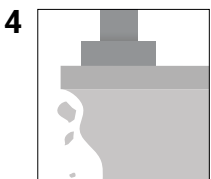
RUST

Iron structures consumed by rust, highly dangerous in the fastening points.



GALVANIC CORROSION

Namely, accelerated corrosion of a metal due to the effect of a corrosive element.



UNSUITABLE MASONRY

The type and condition of the masonry also influence the total safety of the French balcony (even if new or newly replaced).

What you should know...

In an internal study, we found that the attention to safety and standardisation of spaces with French balconies is very minimal, perhaps non-existent.

Even if there is no actual balcony (i.e. a liveable outdoor space), we are still talking about a balustrade that must prevent falling into the void and must withstand a certain impact force to ensure the total safety of people and pets.

The French balustrade, regardless of its width, must comply with the Italian safety regulations for glass balustrades and classes C2/C3.

This for us is an indispensable factor and is the basis of the Julietta system.

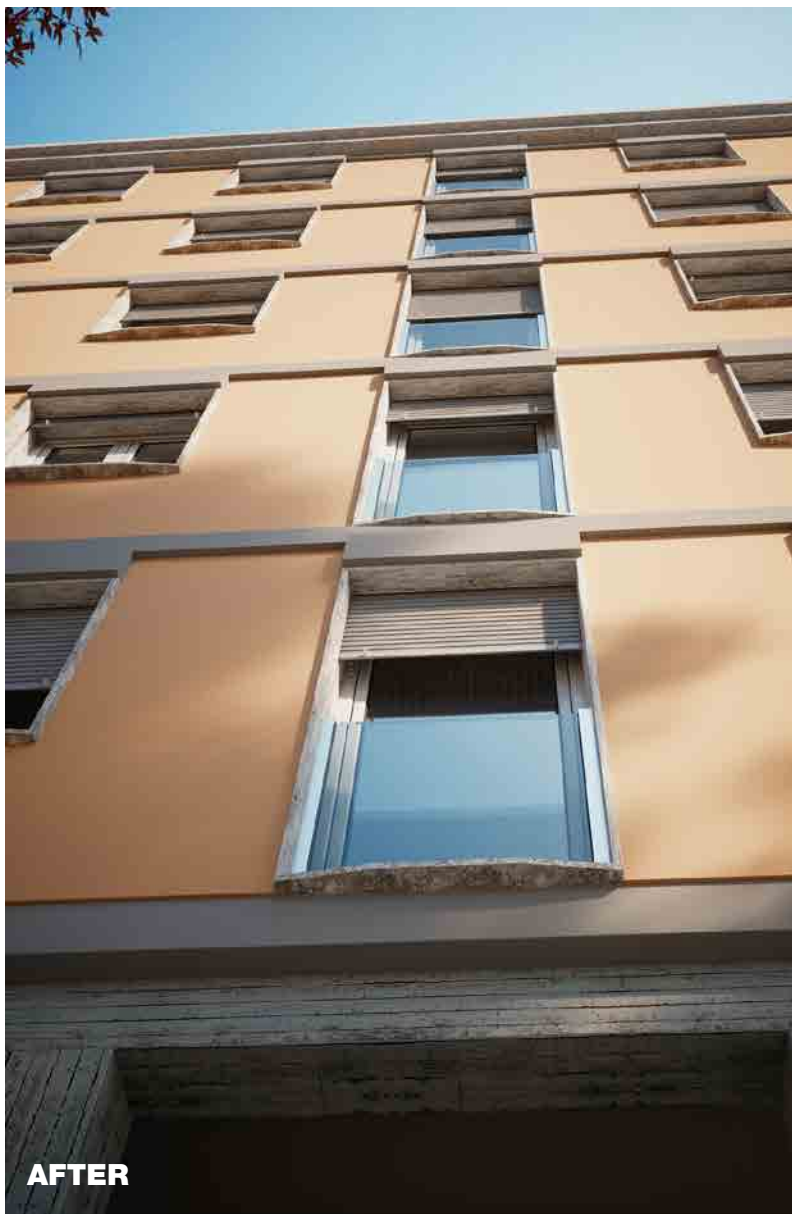
Today, most likely, **the existing artefacts are to be completely replaced** with new and safe ones.

DEFINITION

The French balcony is a balustrade protecting people, installed in front of a full-height window with a drop into the void (wall front or soffit).

Flavio Faraone

Faraone decided to make rooms with French balconies accessible, and therefore safe.



The same building with the new, elegant, French Julietta balconies.

THE FRENCH GLASS BALCONY BY FARAONE

Why Giulietta was born

GIULIETTA, TO DATE IT IS THE SAFEST FRENCH GLASS BALCONY ON THE MARKET.

Attention to market needs combined with Faraone's 15 years of experience in the field of balustrades, particularly in their aesthetics and safety, led to the creation of an important project such as Giulietta.

The R&D department meticulously studied every detail, starting with the technical engineering analysis up to the test cycle to determine the correct functioning of the system.

Giulietta is the first French-style balustrade made in Italy, certified according to national standards, to have passed all static load and impact tests required by the regulations.

As many as 50 crash tests (destructive tests) were carried out for the Giulietta, taking into account the type of application, the type of glass (8+8 or 10+10) (5/16"+5/16" or 3/8"+3/8"), and the width (as wide as 250 cm).

The laboratory tests were performed according to the Italian Ministerial Decree of 17-01-2018 and the Uni 11689-2017 standards.

Over 1,600,000 metres (994.2 miles) of Faraone balustrades installed in Italy and abroad from 2009 to the present day





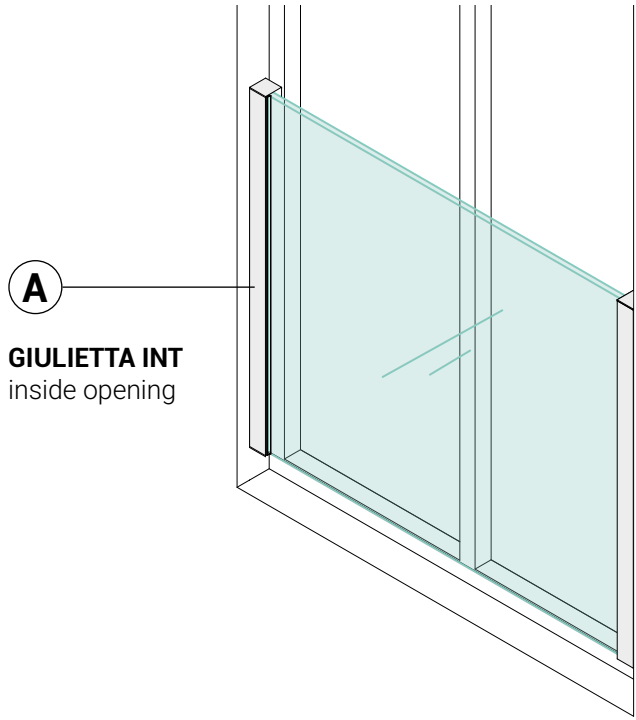
The Giulietta system is divided into two main models:

A) Giulietta INT: Internal fastening (i.e. inside the window opening)

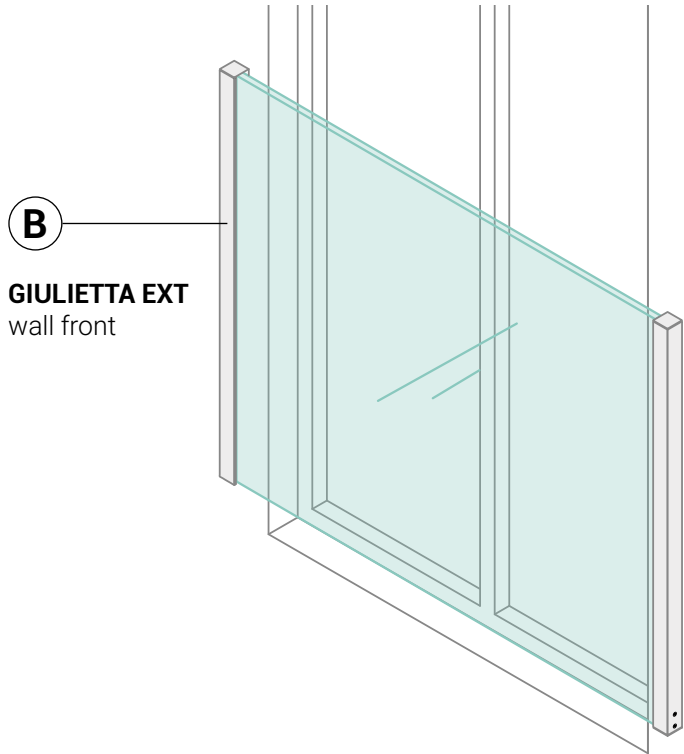
B) Giulietta EXT: Wall-front fastening (i.e. outside the window opening, directly on the facade)

Both systems accommodate both 8.8 and 10.10 glass (5/16" 5/16" and 3/8" 3/8"), with the corresponding gasket. The height of the balustrade can reach up to 1.2 metres (3.94').

Finishes: Customisation as per standard and on request.



A
GIULIETTA INT
inside opening



B
GIULIETTA EXT
wall front

Giulietta INT/EXT **H**



For uncrowded environments:

200 kg/m (134 lb/ft)

Tested up to 300 kg/m (202 lb/ft)

Giulietta INT/EXT **P**



For very crowded environments:

300 kg/m (202 lb/ft)

Tested up to 450 kg/m (302 lb/ft)

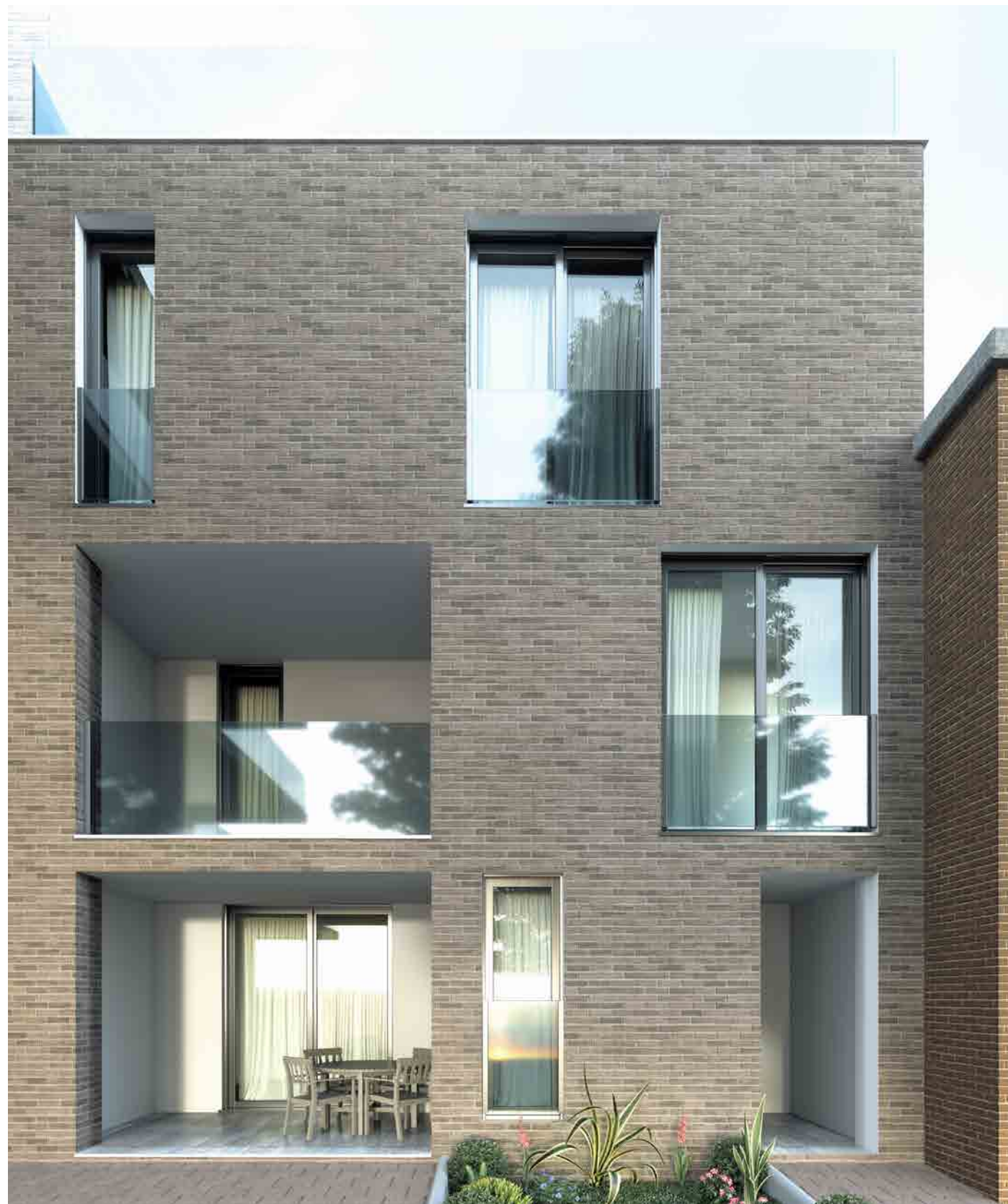
Giulietta **H** (Home)
Giulietta **P** (Professional)





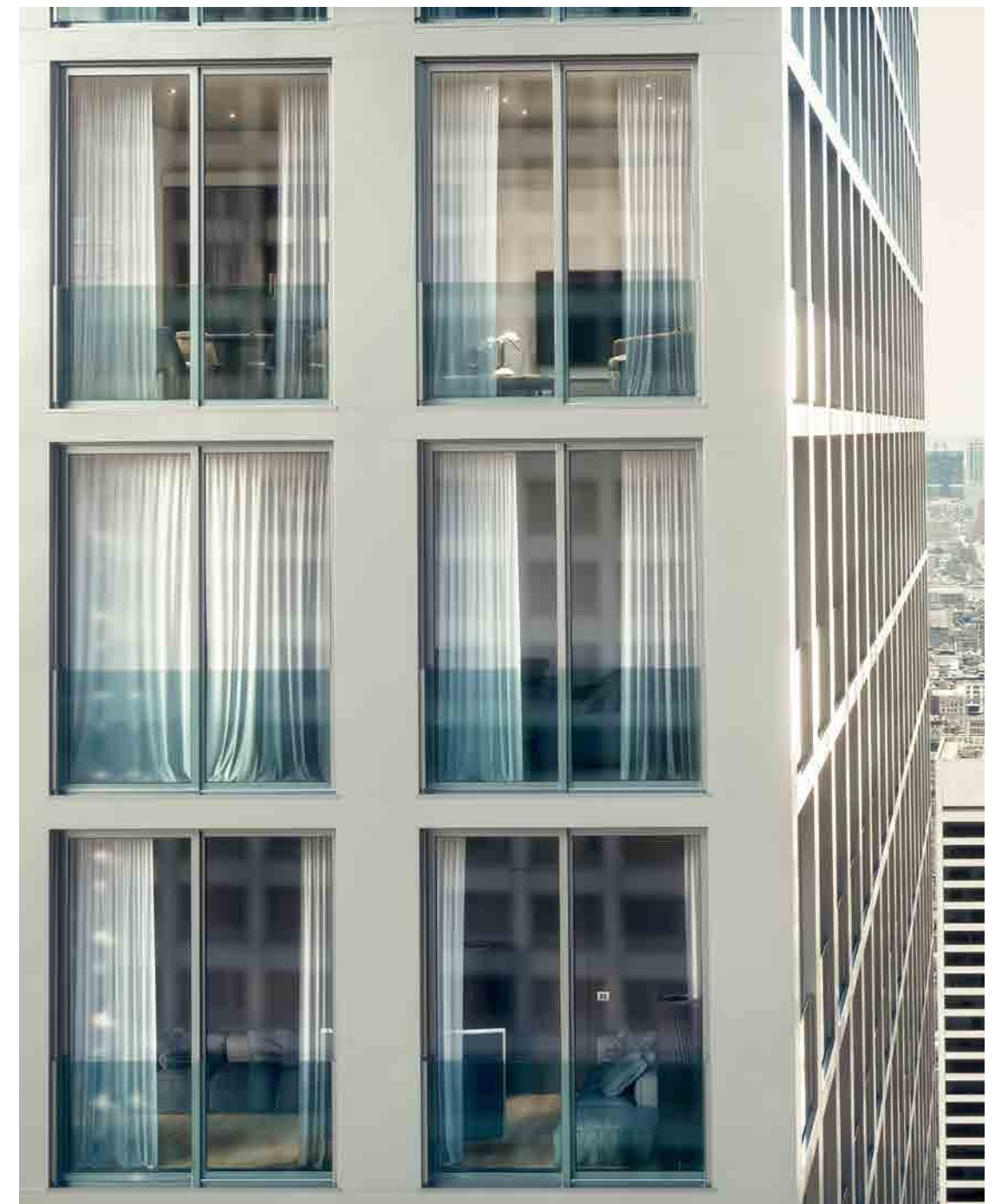
**TOTAL SAFETY FOR
YOUR FAMILY**

Make the most of the space
inside your room even
without the presence of a
balcony



SPECIFIC SOLUTION FOR EACH WINDOW OPENING

Example of French Julietta balcony insertion with different glass widths, from 60 cm to 250 cm (24" to 98").



TECHNOLOGY PACKAGE

1. Julietta system + 2. Safety glass

Only with **Giulietta technology** and the **right safety glass** is it guaranteed to achieve the same **performance** as NINFA* and comply with regulations.

When we speak of a **"Technology package"** we are referring to the set of two components that make the Giulietta system **effective, safe** and **guaranteed**.

Why are both essential?

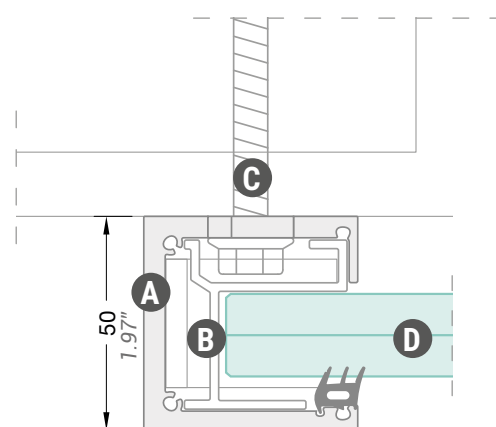
The Giulietta System encompasses all of Faraone's know-how in the world of glass balustrades. From strength performance, demonstrated during laboratory tests together with calculations using specific software, to installation requirements and ease of assembly.

The Safety glass, on the other hand, concerns the production technique of glass panes, the tempering and working processes that make this basically fragile material resistant and high-performance.

The number of panes that make up the balustrade, their thickness and the type of interlayer inserted inside affect this.

* Ninfa, the most widely used all-glass balustrade in Italy

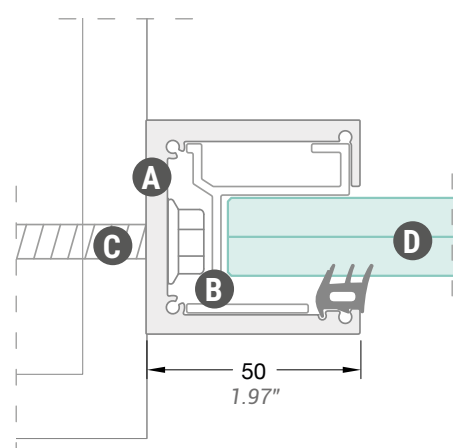
GIULIETTA EXT (wall front)



①
GIULIETTA
SYSTEM

- A Extruded aluminium alloy profile
- B Extruded PVC profile
- C Fastening screw

GIULIETTA INT (inside opening)



②
SAFETY
GLASS

- D Tempered-hardened laminated glass thickness 8.8/10.10 (5/16" 5/16" / 3/8" 3/8")

①

GIULIETTA SYSTEM
(PROVIDED BY FARAONE)

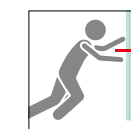


②

SAFETY GLASS
(INDICATED BY FARAONE)



The advantages of the Faraone technology package



TESTS IN COMPLIANCE WITH REGULATIONS

We calculate and test Giulietta's strength capacity according to current regulatory standards.



INTENDED USE

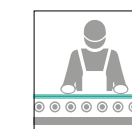
Each Giulietta French balcony is designed to be fixed on the wall front or inside opening.



SPEED OF ASSEMBLY

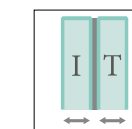
Assembly is immediate. However, it must be ensured that it is fixed on a load-bearing support.

Rely on Faraone's instructions on glass



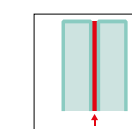
HARDENING AND TEMPERING PROCESSES

One of the main steps in processing glass to increase its strength.



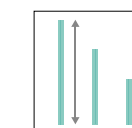
CORRECT ASSEMBLY

In addition to the thickness of the glass panes, it is important to **include hardened glass on the inner side and tempered glass on the outer side**.



TYPES OF INTERLAYERS

An essential element that determines the behaviour of the glass even after breakage. Use "rigid" plastic (Sentryglas type) for higher resistances.



CERTAIN GLASS HEIGHT

Thanks to the data from our tests, in addition to the types of glass, we are able to indicate the maximum height of each glass relative to its intended use.

① GIULIETTA SYSTEM

The heart of the Julietta system

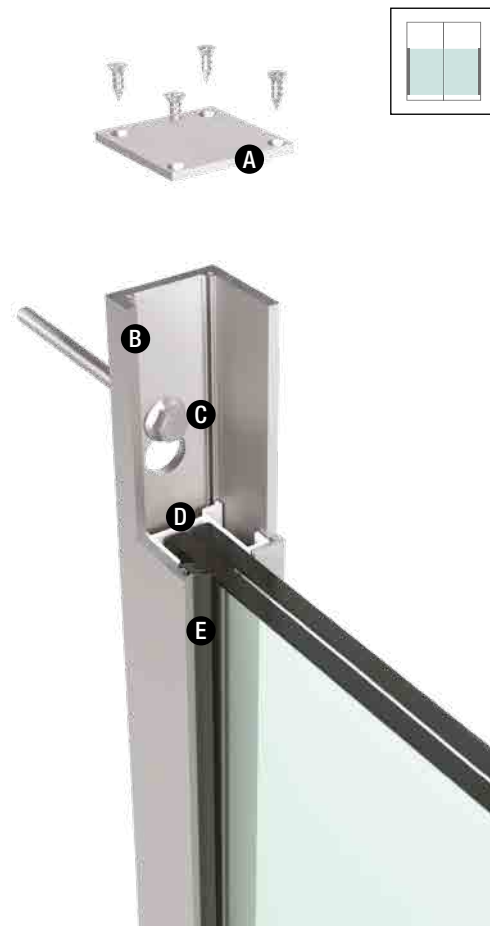
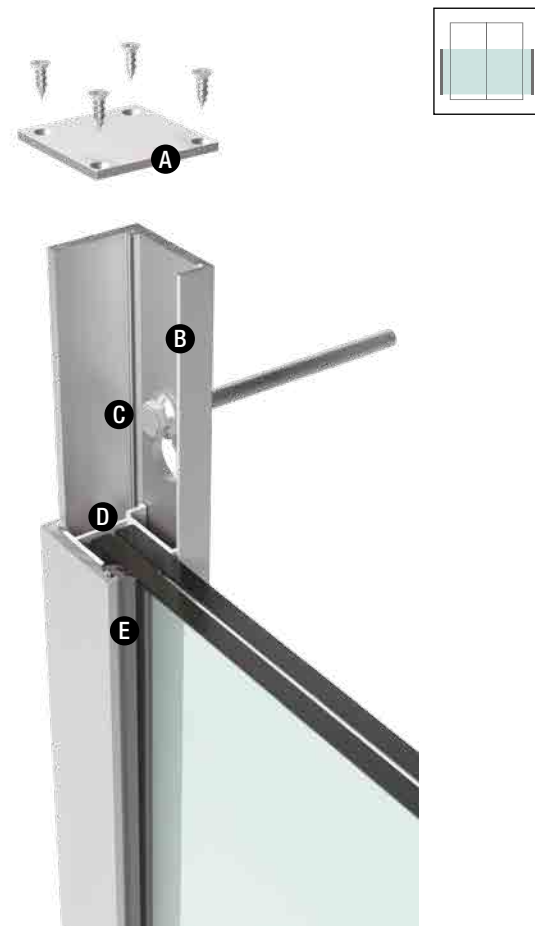
The main block of the Julietta profile (the same for both INT and EXT models) consists of the following elements:

- The aluminium profile
- The internal PVC profile that houses and blocks the glass
- The fastenings, not visible.
- The glass press gasket

STRENGTHS

- Certified performance according to regulations in force
- Adaptable to different glass lengths and customised projects
- Extensive customisation of finishes
- Reduced number of components for immediate assembly
- Heights are supplied both in kit and customised form

- A** Closing cap
- B** Aluminium profile
- C** Fastening screw
- D** PVC profile
- E** Gasket



② SAFETY GLASS

The following points must be taken into account

A. HARDENING PROCESS

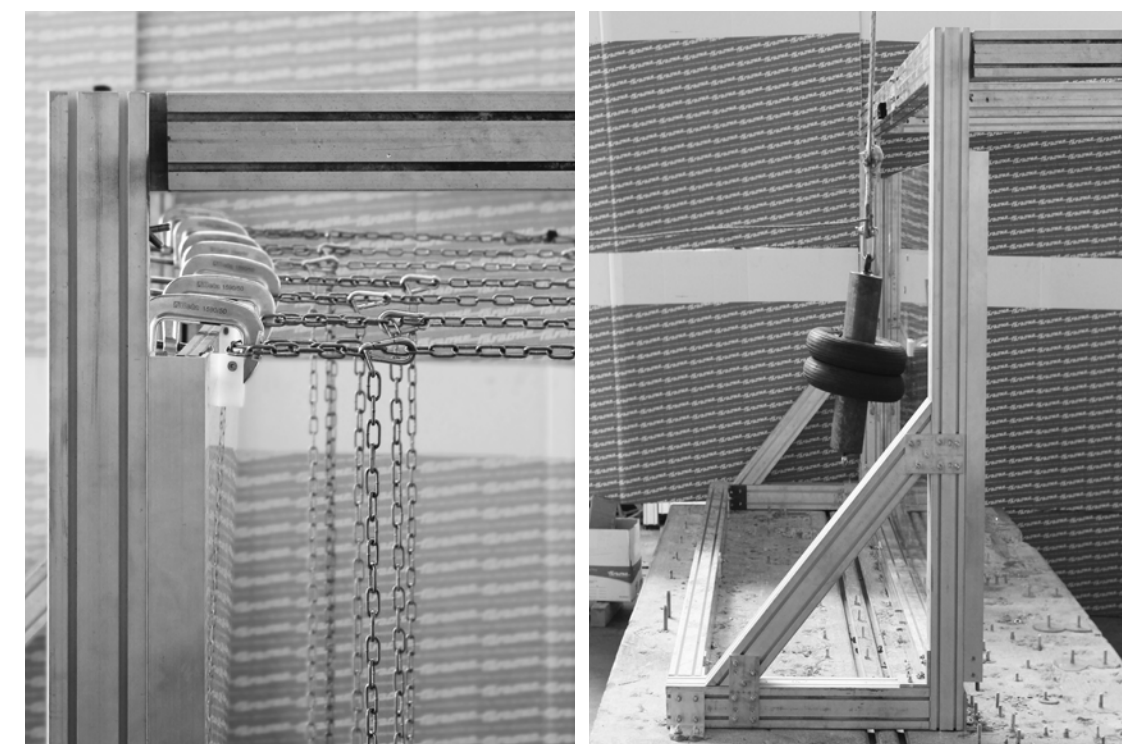
- Increased mechanical resistance to bending and tensile stress.
- Avoids breakage caused by thermal shock.

B. LAMINATION PROCESS

By means of lamination, two or more panes of glass can be joined together by means of interlayer sheets, thanks to which it is possible to give the glass greater ductility and increase its performance.

C. TYPES OF INTERLAYERS

- Elastic interlayers E.G. EVA, PVB
- Rigid interlayers E.G. SG, X-LAB, ABAR



1. Static load test (DM 2018)

2. Impact test (UNI 11678) performed on Julietta EXT

3. Impact test (UNI 11678) performed on Julietta INT

*Tests carried out on a rigid structure simulating the window opening.

MAXIMUM TRANSPARENCY OR PRIVACY?

Maximum transparency

Enjoy the show outside.

Use an extra-clear transparent glass or the classic one with a greenish hue, and take advantage of the maximum transparency, for excellent outward visibility and increased brightness.



Transparent glass

Privacy

Dare with customised glass.

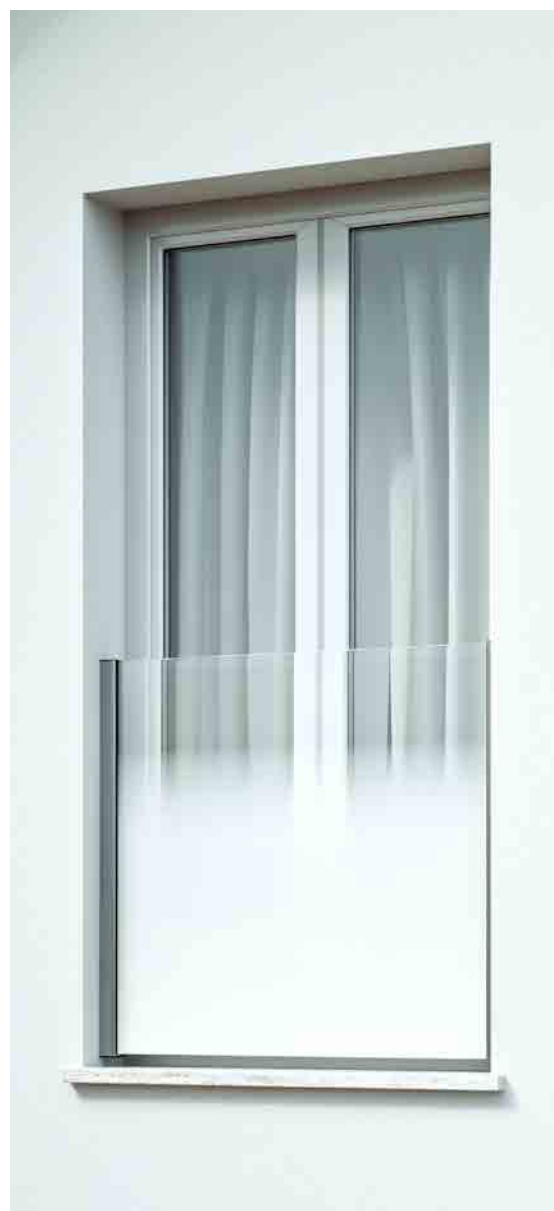
Get the effect you want:

- cloud
- totally coloured
- satin
- acid-etched
- with design or digital print



Glass with cloud effect finish





DESIGN AND FINISHES

Clean, minimalist lines of the aluminium profiles combined with an elegant “cloud” effect glass finish, also ideal for privacy.



CUSTOMISATION FOR A UNIQUE DESIGN

Customise your profile, choose the classic and elegant silver design or find your own colour from more than 2,000 RAL colours (on request).

PROFILE FINISH: STANDARD

BASE



SILVER
ANODISED
20 microns

PROFILE FINISH: ON REQUEST



2,000 RAL COLOURS



Riproduzione esemplificativa delle finiture disponibili

GLASS FINISHES

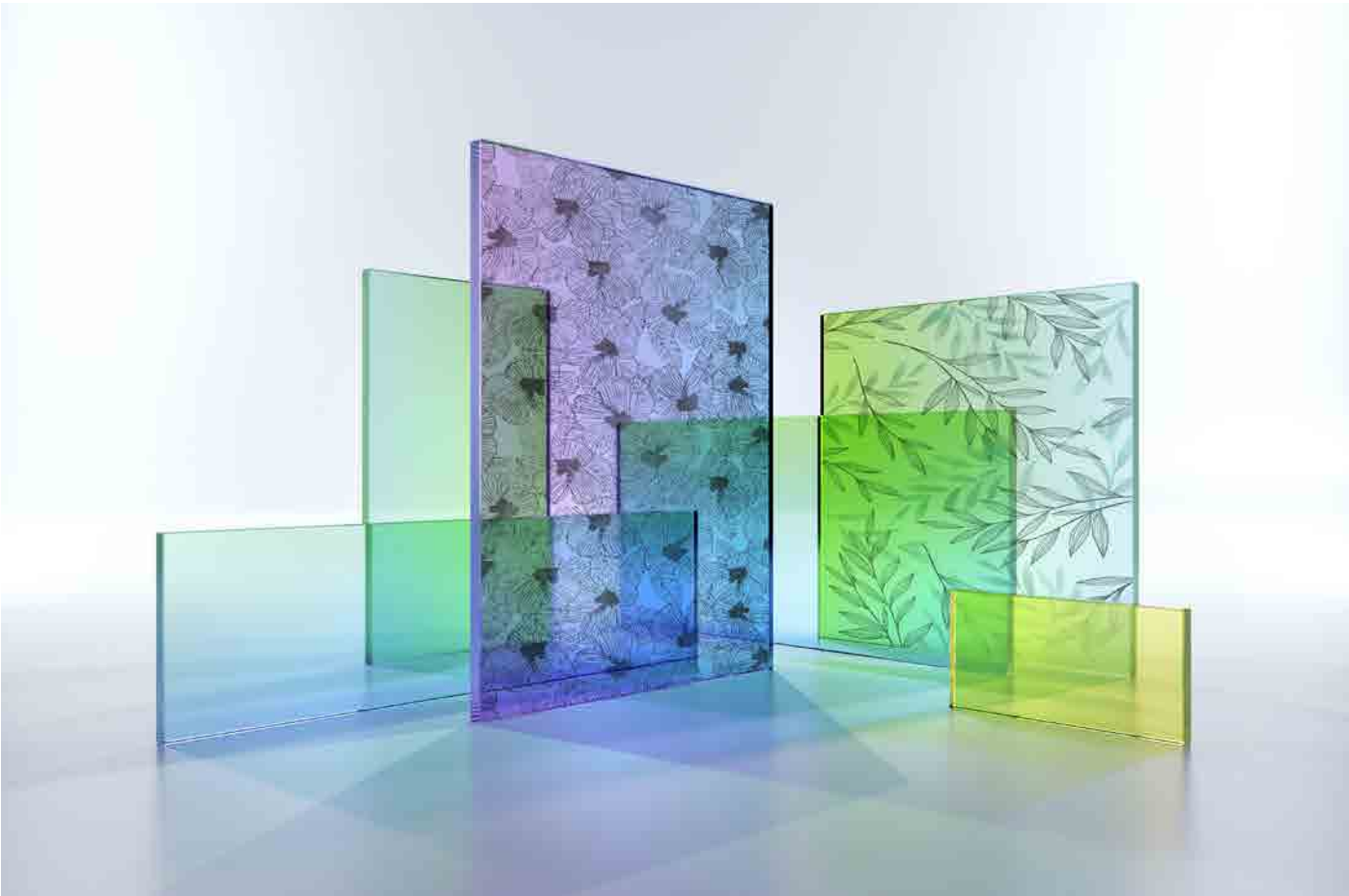
Not just transparent glass.

Choose to customise your panes with opaque colours or special shades such as the cloud effect. Use screen printing or acid etching to add a creative touch to your environment. Customise the interlayer with special fabrics or print your favourite graphic or effect directly onto the glass.

Colour the glass panes, choose your screen print, layer with your fabric or print your customised graphic on the pane.

FOLLOW OUR DIRECTIONS

Get the effect you have in mind



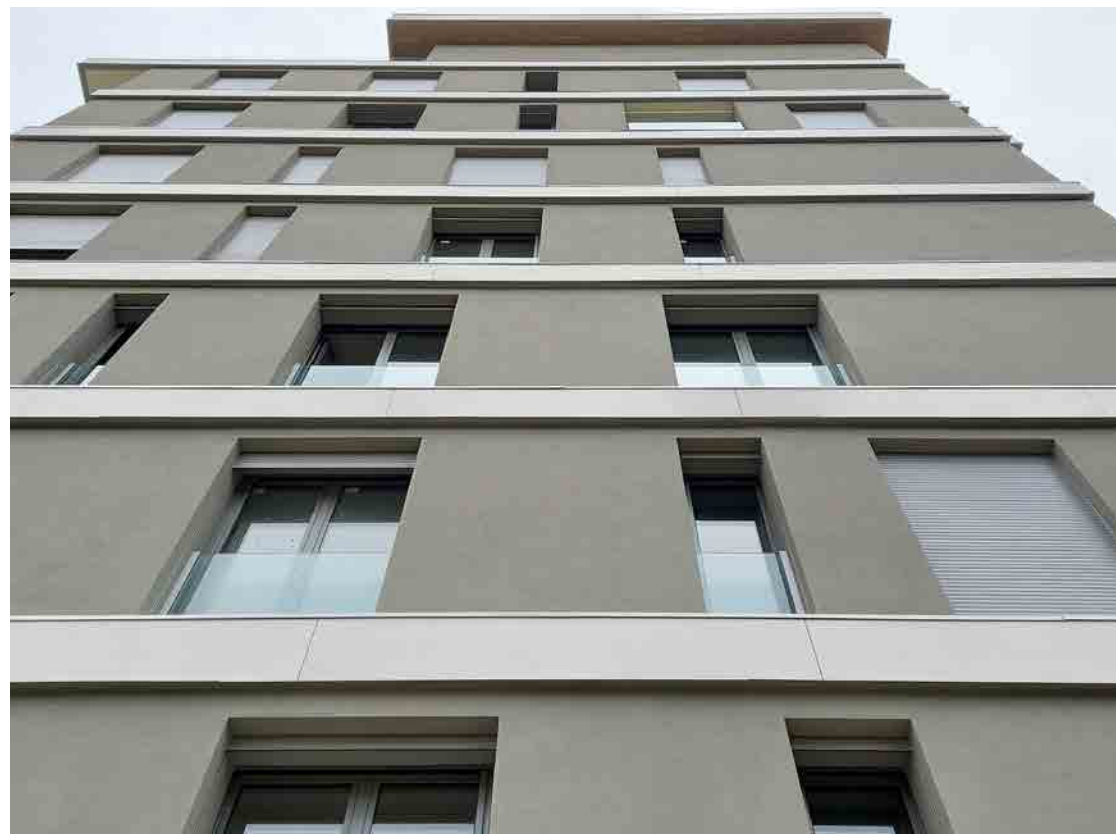
CASE HISTORIES

Residential building, in the Milan area

Giulietta's potential and versatility are expressed in this trendy, residential building in Brugherio, Milan. The French glass balcony integrates perfectly in projects like this where there is a need to provide light and protection in the presence of full-height windows.

In this particular case, the Giulietta INT system was chosen, adapting the width of the glass to the different window sizes.

From the inside, the feeling is that of having a visually larger environment, with the possibility of looking outwards in complete safety, as on a classic balcony with a glass balustrade.





Example of an on-site test with static load test up to 300 kg/m (202 lb/ft) with a 10+10 (3/8"+3/8") glass 250 cm (98.4") wide and 110 cm (43.3") high, with totally positive results.

More:

Some guidelines and clarifications.

- It is important to choose the correct fastening according to the type of support on which the Julietta system is to be installed.
Particular care must be taken when fastening on supports other than: reinforced concrete pillars, steel, wood supporting structures.
- When fastening on brickwork, either on the inside of the window reveal (Giulietta int) or on the wall front (Giulietta ext), the designer must carefully consider how to create a suitable support for safe fastening.
- It is advisable to carry out tests on site to ensure that the installation has been carried out correctly to ensure maximum safety of the balustrade.
- It is not possible to fasten the Julietta aluminium profile directly onto the frame/profile of the window, as it would not be resistant to static load test according to Italian regulations.
- Faraone does not supply the fastening screws for the Julietta kits.
The choice of fastening is left to the designer and/or Works Supervisor.

GLASS HEIGHTS

Examples of installations with different heights

GIULIETTA INT

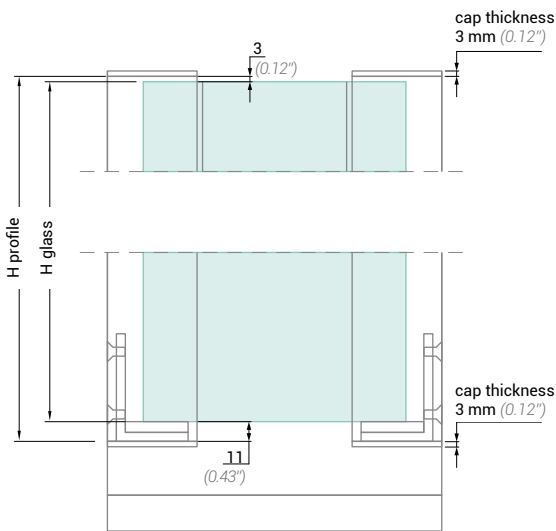
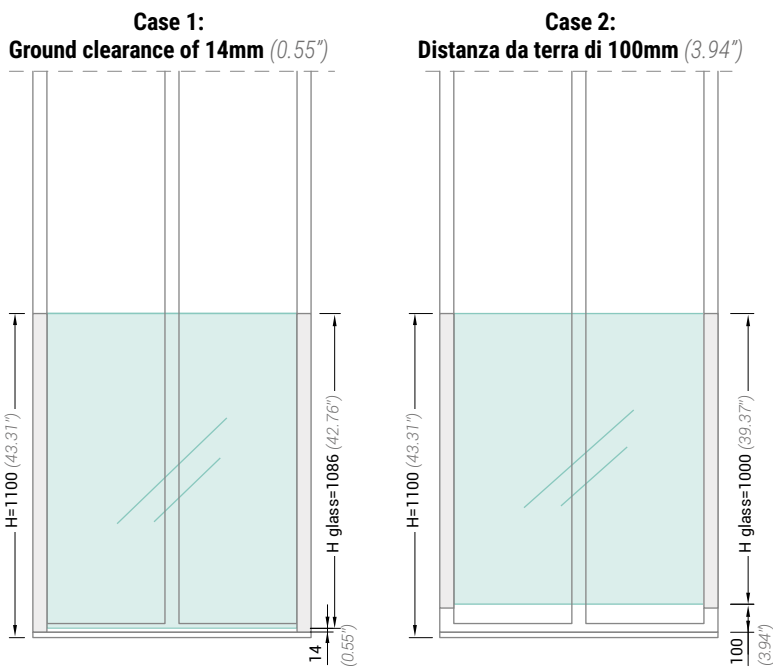
The height of a balustrade glass is determined by several factors. The regulations, in fact, specify that the minimum height must be 1 metre (3.28') to be within the safety parameters.

The Julietta system safely reaches a height of 1.2 metres (3.94 ft) from the floor.

In addition to the total height of the balustrade, there are other parameters to take into account, such as the distance of the glass from the floor. In this regard, in fact, the regulations require that the balustrade must be impassable by a sphere with a diameter of 10 cm (3.94").

Specifically, therefore, it is possible to install the glass at a ground clearance ranging from a minimum of 14 mm (0.55") to a maximum of 100 mm (3.94"), as shown in the drawings on the right for the Julietta INT model. (Case 1 and Case 2).

As the distance from the ground varies, so does the height of the glass.



$$H \text{ glass} = H \text{ profile} - 14\text{mm} (11\text{mm}+3\text{mm}) / H \text{ glass} = H \text{ profile} - 0.55" (0.43" + 0.12")$$

$$H \text{ profile} = H \text{ glass} + 14\text{mm} (11\text{mm}+3\text{mm}) / H \text{ profile} = H \text{ glass} + 0.55" (0.43" + 0.12")$$

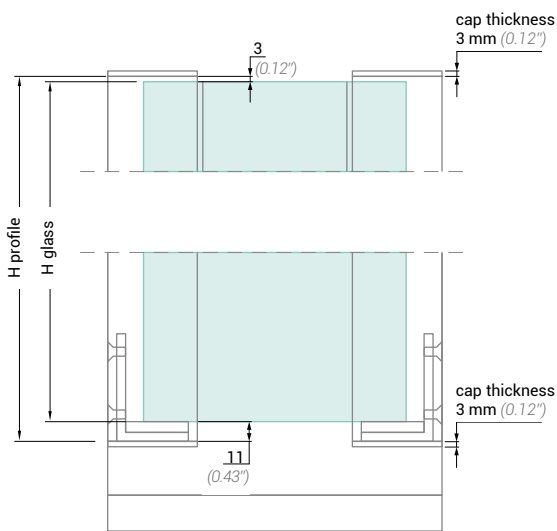
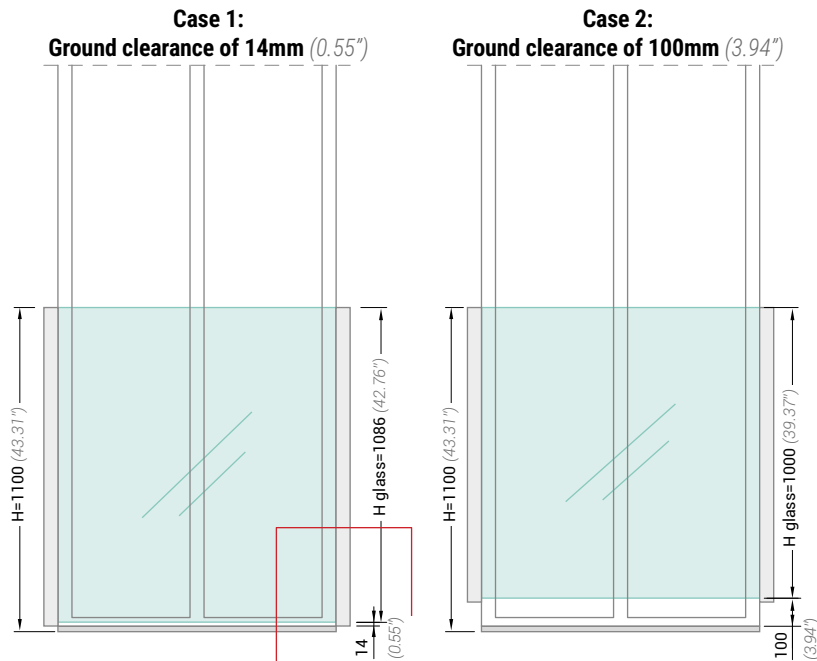
GIULIETTA EXT

In the case of Julietta EXT, the same rules apply as described for Julietta INT with one difference.

The Julietta EXT system, i.e. with mounting outside the window opening, can also be positioned lower than the window opening, as long as it respects the minimum safety height of 1 metre.

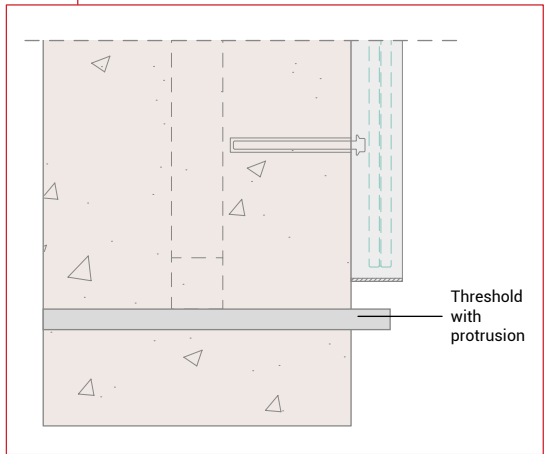
If there is a protruding element, such as a windowsill, the balustrade must be installed above this threshold, and the ground clearance range (14 mm to 100 mm / 0.55" to 3.94") must be observed accordingly.

Again, as the distance from the ground varies, so does the height of the glass.



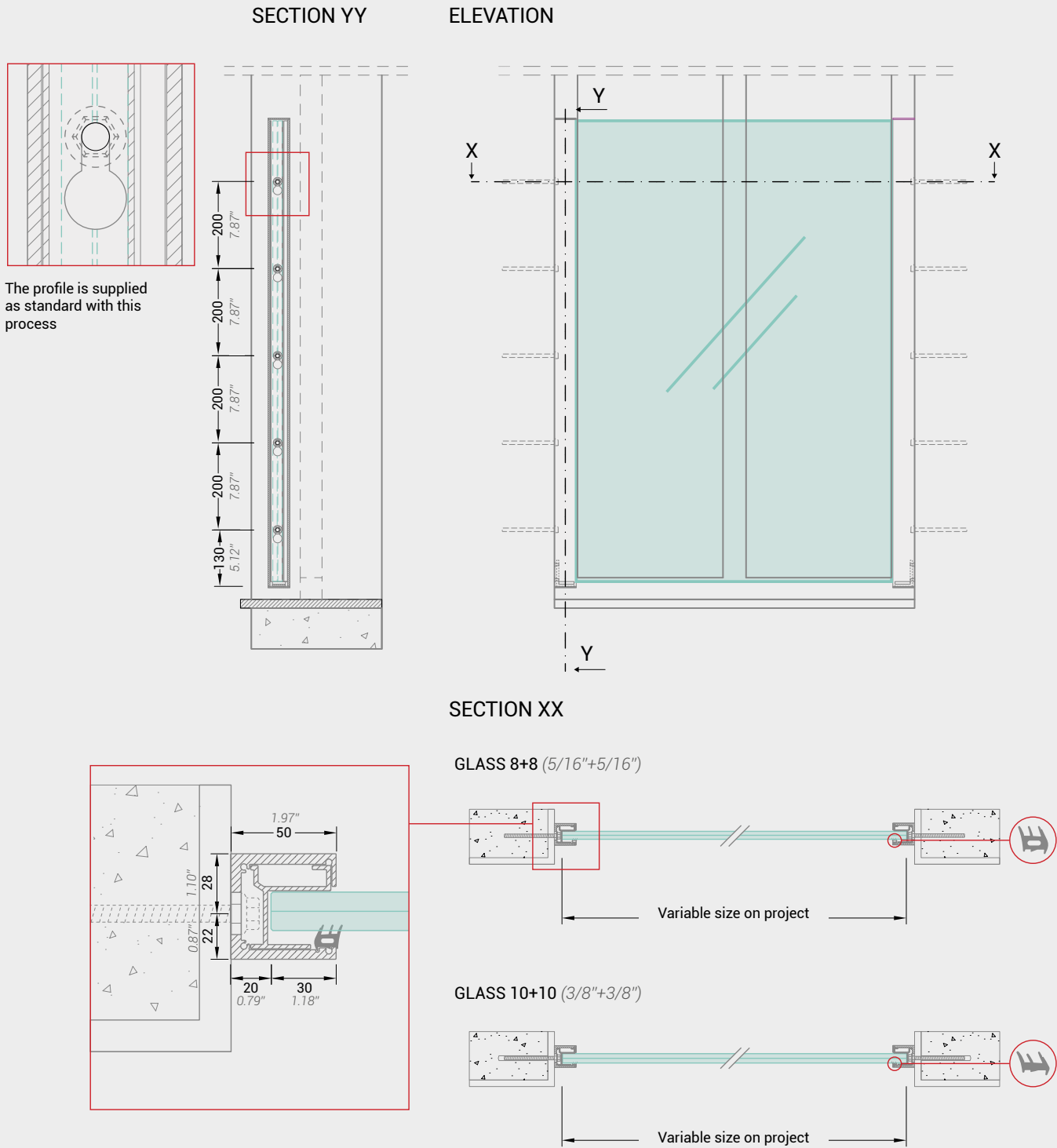
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$$H \text{ profile} = H \text{ glass} + 14\text{mm} (11\text{mm}+3\text{mm}) / H \text{ profile} = H \text{ glass} + 0.55" (0.43" + 0.12")$$

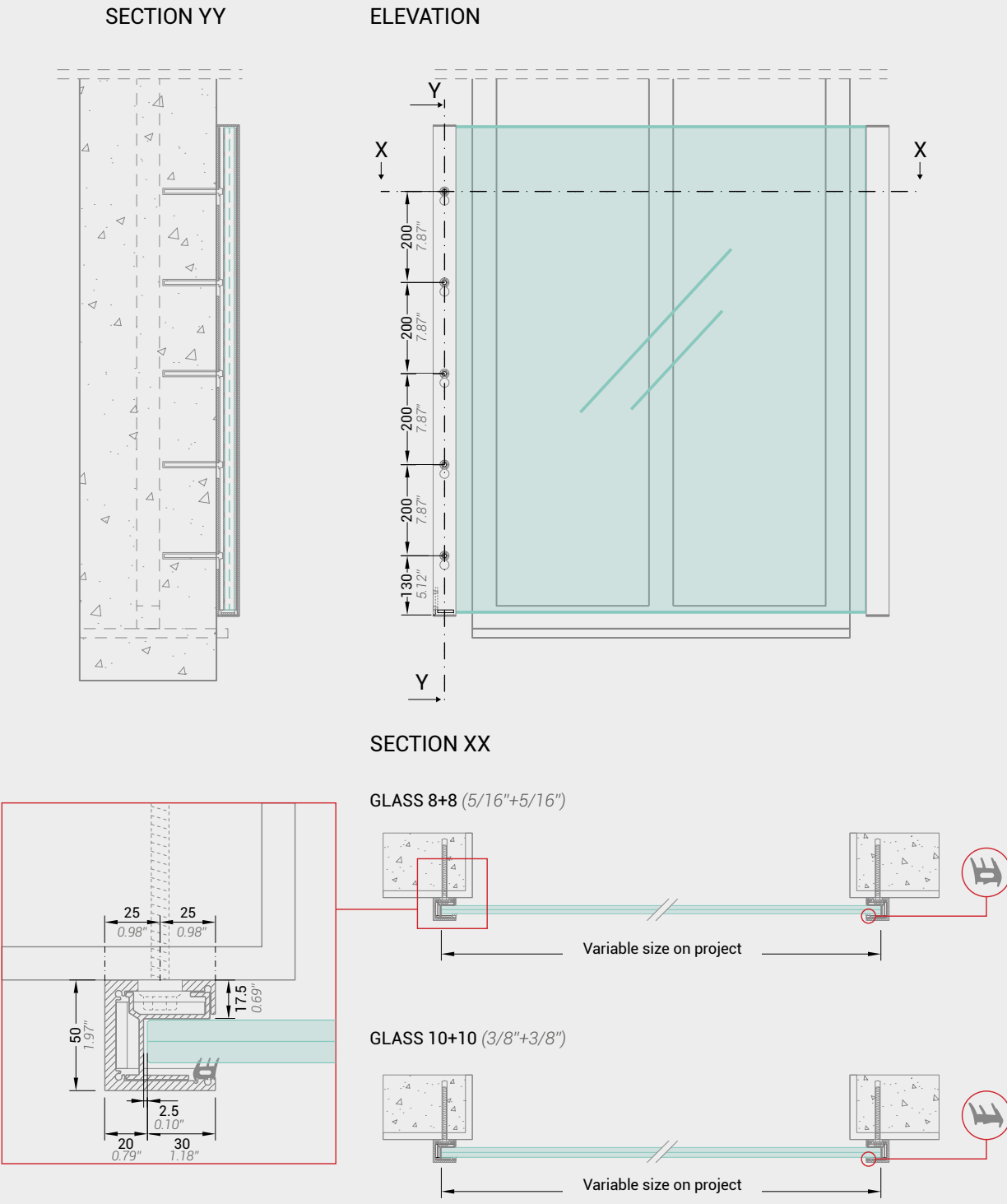


TECHNICAL DETAILS

GIULIETTA INT - inside opening

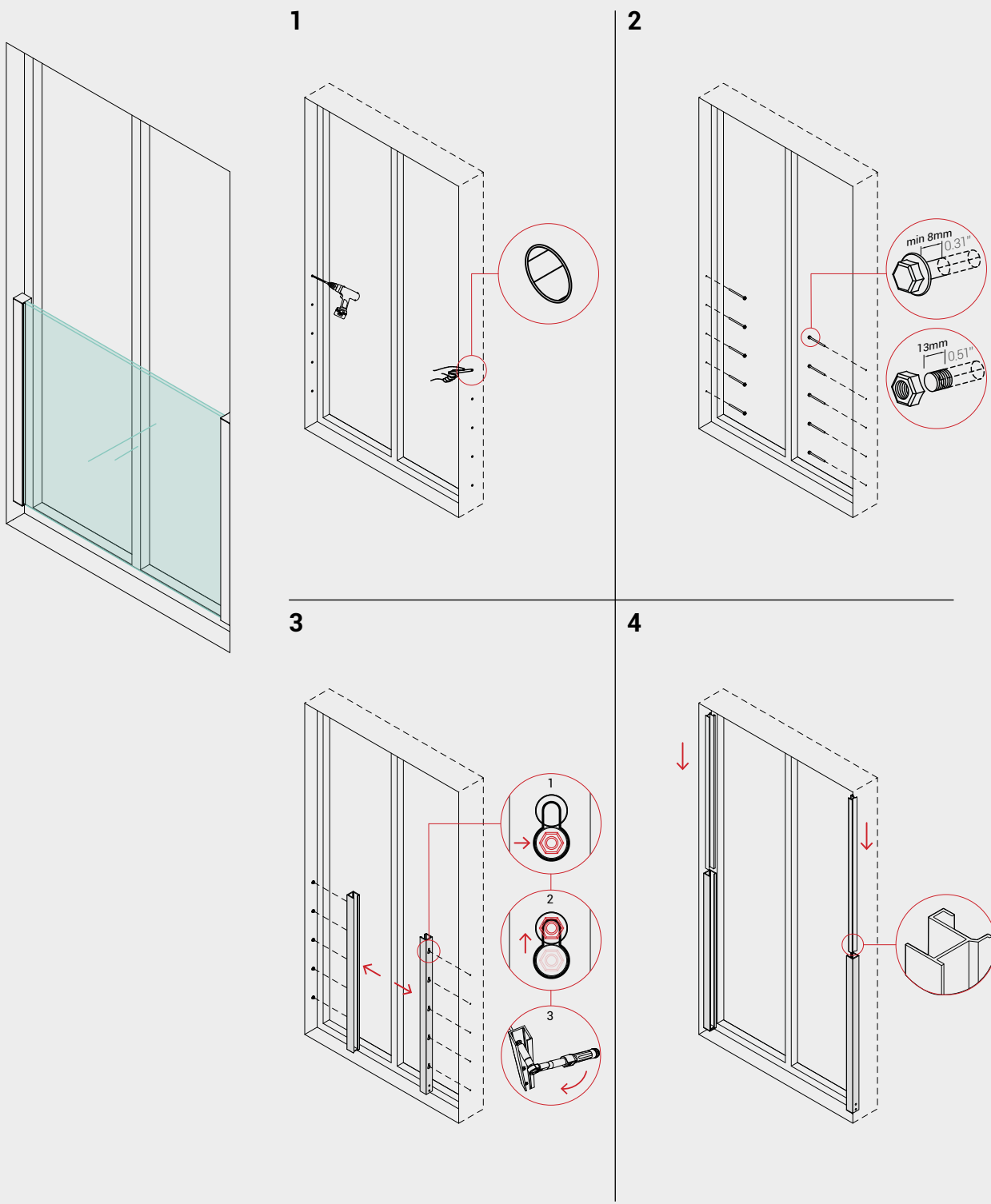


GIULIETTA EXT - wall front



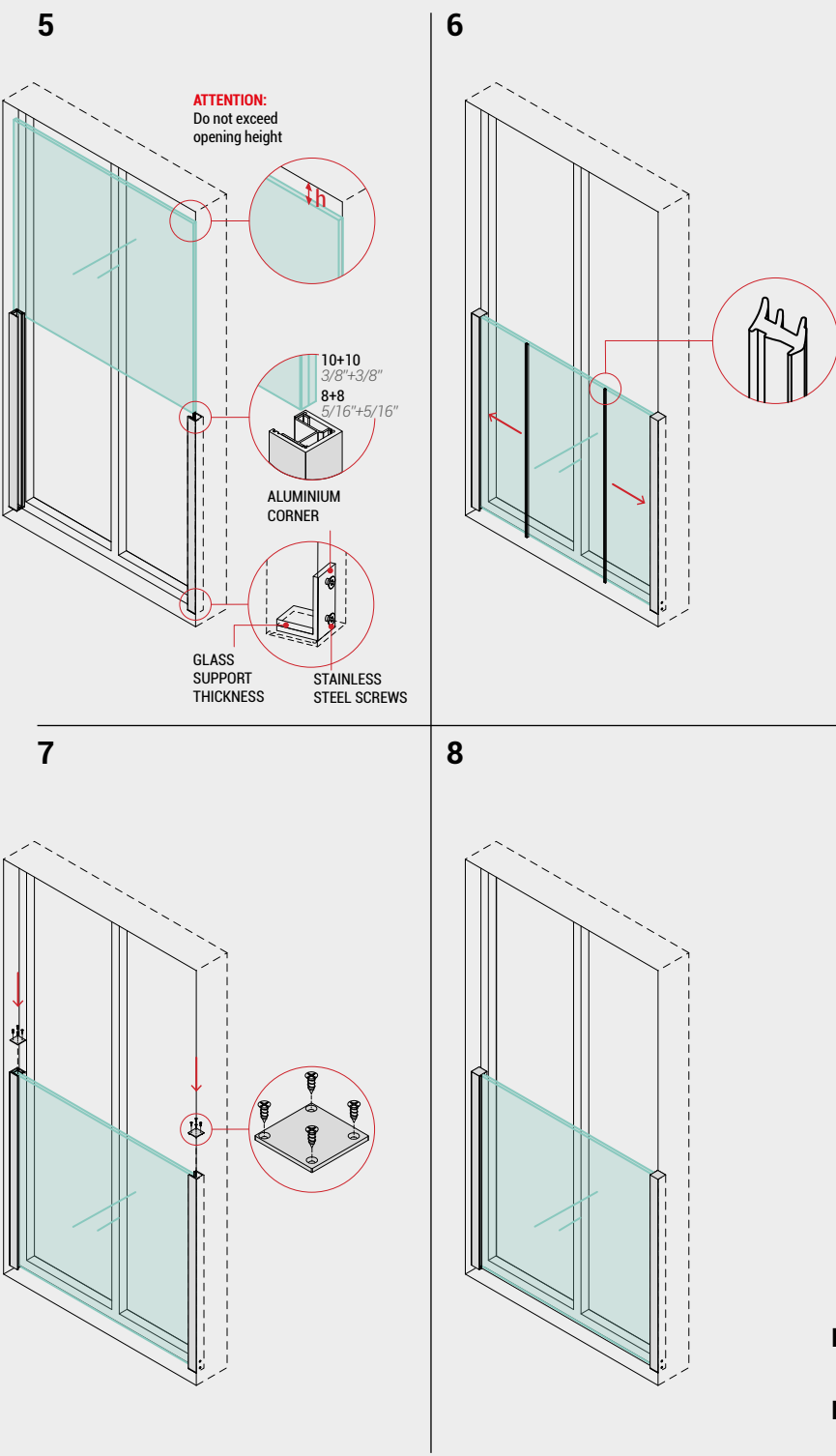
QUICK ASSEMBLY

GIULIETTA INT - inside opening



Immediate assembly

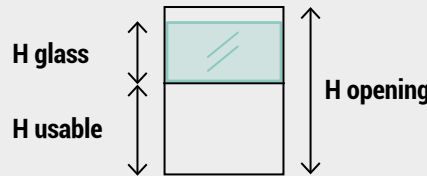
5 construction elements: aluminium bar, PVC profile, gasket, glass, caps.



Assembly steps:

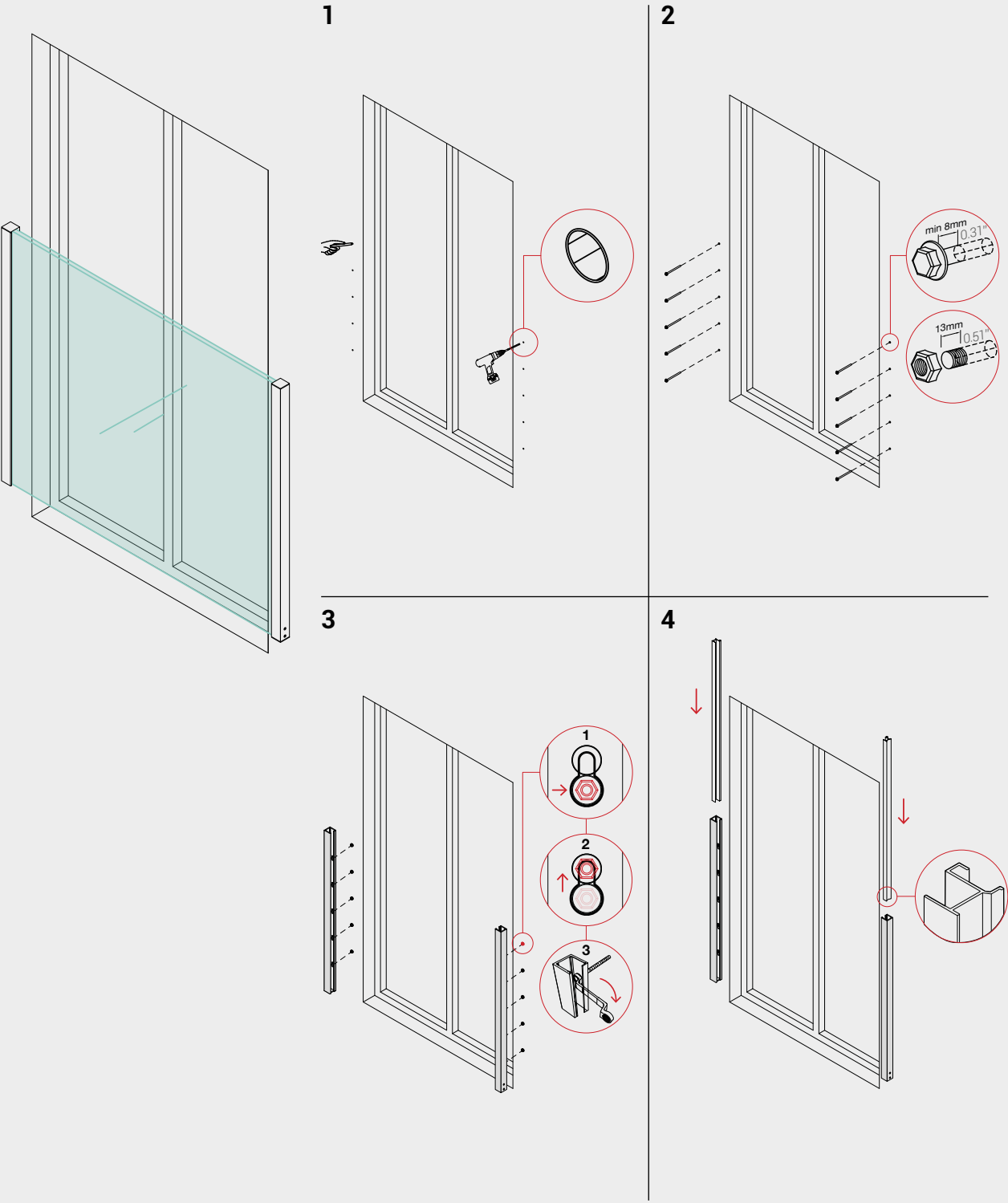
1. Drill holes in the masonry.
2. Insert screws (already chosen by the construction management according to the type of fastening).
3. Position the profile using the existing slots in the holes, then tighten the screws.
4. Insert PVC profile from above on both sides.
5. Insert the glass pane from above, until it rests on the corner at the bottom of the profile. Caution: The height of the manoeuvring space to insert the glass must be at least twice the height of the pane. *** Follow the formula below for the calculation.**
6. Insert the press-fit gasket, so that the glass is locked in place.
7. Finally, screw the aluminium closing caps on top of each profile.
8. Finished! **Giulietta INT** is ready

*** opening H > usable H + glass H + 50 mm**



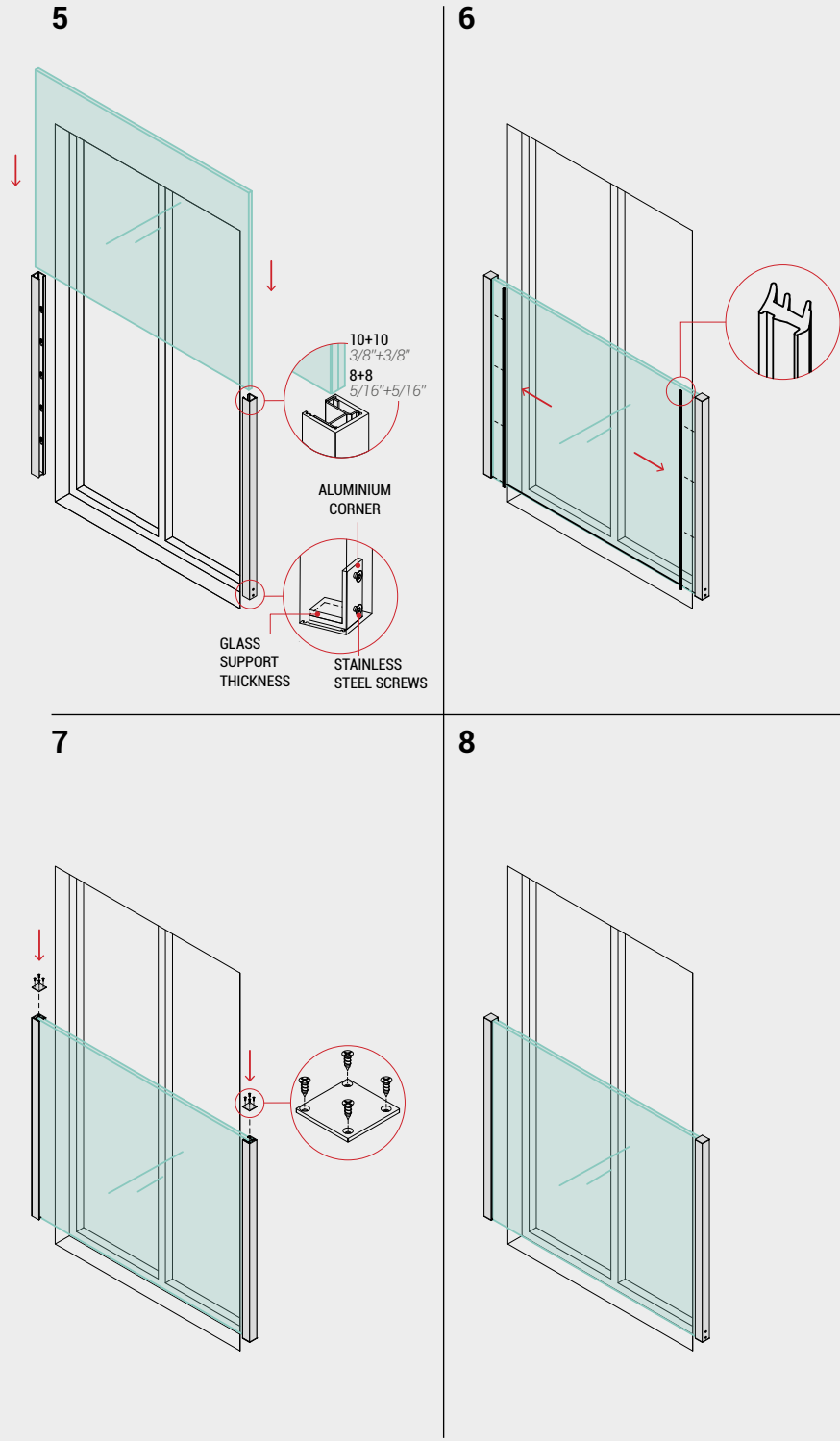
QUICK ASSEMBLY

GIULIETTA EXT - wall front



Immediate assembly

5 construction elements: aluminium bar, PVC profile, gasket, glass, caps.



Assembly steps:

1. Drill holes in the masonry.
2. Insert screws (already chosen by the construction management according to the type of fastening).
3. Position the profile using the existing slots in the holes, then tighten the screws.
4. Insert the internal PVC profile from above on both sides.
5. Insert, again from above, the glass pane all the way to the bottom of the profile, where it will rest on the already assembled corner.
6. Insert the press-fit gasket, so that the glass is locked in place.
7. Finally, screw the aluminium closing caps on top of each profile.
8. Finished! **Giulietta EXT** is ready

GIULIETTA: OTHER APPLICATIONS

Examples of alternative solutions with the Giulietta system

The Giulietta system was created specifically for French balconies, however, it is also suitable for other types of applications in redevelopment projects or where a special customised solution is required.

For example, when the classic balustrade cannot be installed because a ground anchorage is not possible in the existing structure, or due to other technical problems.

One of the advantages offered by the Giulietta system, in addition to reaching a width of 250 cm (98.43"), is that the profile can be fixed laterally without drilling holes in the floor.



GIULIETTA INT/EXT

Many solutions for every need. Transform your balcony with the Giulietta system by installing a new, safe and standardised balustrade on your existing structure.

No holes in the floor

* It is indispensable to fasten to a load-bearing structure and to install **on masonry in a safe manner according to the instructions provided by Faraone.**



GIULIETTA: OTHER APPLICATIONS

Examples of alternative solutions with the Giulietta system

In this other case study, Giulietta was placed along the perimeter of a terrace.

The structure has pre-existing painted iron posts on which the classic (and unsafe) fastening of the glass with stainless steel clamps was initially planned.

The designer then thought of exploiting the visual effect and safety of the Giulietta, allowing both a more pleasing solution and passing the stringent static load and impact tests required by regulations.

The Faraone technology was quickly and easily attached to the metal column, leaving the glass pane free of visual disturbing elements.



Construction site image before installation of Giulietta



Terrace with Giulietta system completed

Another case of alternative application of the Giulietta system can be found in this wooden house project.

This also allowed for all-glass balustrades with a width of 250 cm (98.43") and a height of 110 cm (43.31").

Precisely because of the particularity of the structure and the materials of which it is composed, the designer decided not to install a normal floor-mounted balustrade (thus avoiding touching the waterproofing layer) but to take advantage of the already existing columns to fasten laterally with Giulietta profiles.





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How to contact us:

email: faraone@faraone.it
Tel: +39 0861 784200
web: faraone.it



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TECHNICAL SPECIFICATIONS

“Giulietta” glass balustrades for French balustrade system (or similar), complying with the standards currently in force, with relative certification* containing:
Static load test with resistance to horizontal static linear load of 2 kN/m (137 lb/ft) or 3 kN/m (206 lb/ft);
Technical drawings with the measures and dimensions of each single component of the balustrade. Furthermore, it is necessary to define the type of glass sheets and interlayer of the layered package in order to meet the “Post-Breakage” requirement.

1. “Giulietta” FRENCH BALUSTRADE CHARACTERIZATION
French system “Giulietta” balustrade or railing (or similar) made with 6060 T66 aluminium alloy profile of the type chosen by the Works Supervisor based on the intended use and the class to which it belongs, suitable to be mounted in 2 different situations:
• directly on the external facade of the building;
• on the intrados of a French window.
The glass can easily be inserted vertically from above into the lateral “U” profiles.
The glass, in all situations, will be linearly constrained on the side edges (short sides if the width of the glass is > 1 m (3.28’).

2. FUNCTIONALITY AND AESTHETICS OF “Giulietta” FRENCH BALUSTRADES
The type and quantity of fastenings on the wall of the profiles will vary according to the resistance class required by the Works Supervisor and the nature of the substrate. If the fixing is carried out on a beam or base in reinforced concrete, it will be necessary to make sure that the concrete is of minimum C25/30 class.

3. PERFORMANCE IN POST-BREAKAGE CONDITIONS
For the profiles of the “Giulietta” French balustrade system, it will be sufficient to use tempered-hardened laminated glass to obtain residual post-breakage resistance. It is advisable to pay extreme attention to the installation of the hardened sheet which must be placed in the compressed part of the laminate, i.e. internally to the horizontal static linear load and impacts.

4. ADDITIONAL SAFETY GUARANTEES AFTER GLASS BREAKAGE
RIGID INTERLAYER: To ensure “system redundancy” and significantly improve the performance of the balustrade, it is possible to use a rigid interlayer.
In this case, the glass will be tempered-tempered (for a greater resistance than with the hardened one) and coupled with rigid plastics belonging to family 2, as defined in EN 16613:2019. These systems must guarantee a resistance to horizontal static linear load of 3 kN/m (206 lb/ft) even with the breaking of a glass sheet and avoid the immediate collapse of the laminate in the event of breaking of both glass sheets. Note that this solution involves a price increase due to the cost of the stratification with rigid interlayer.

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Faraone s.r.l. a socio unico
Via Po 12 / 64018 Tortoreto (TE) Italy.
T. +39 0861 784200
www.faraone.it

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