

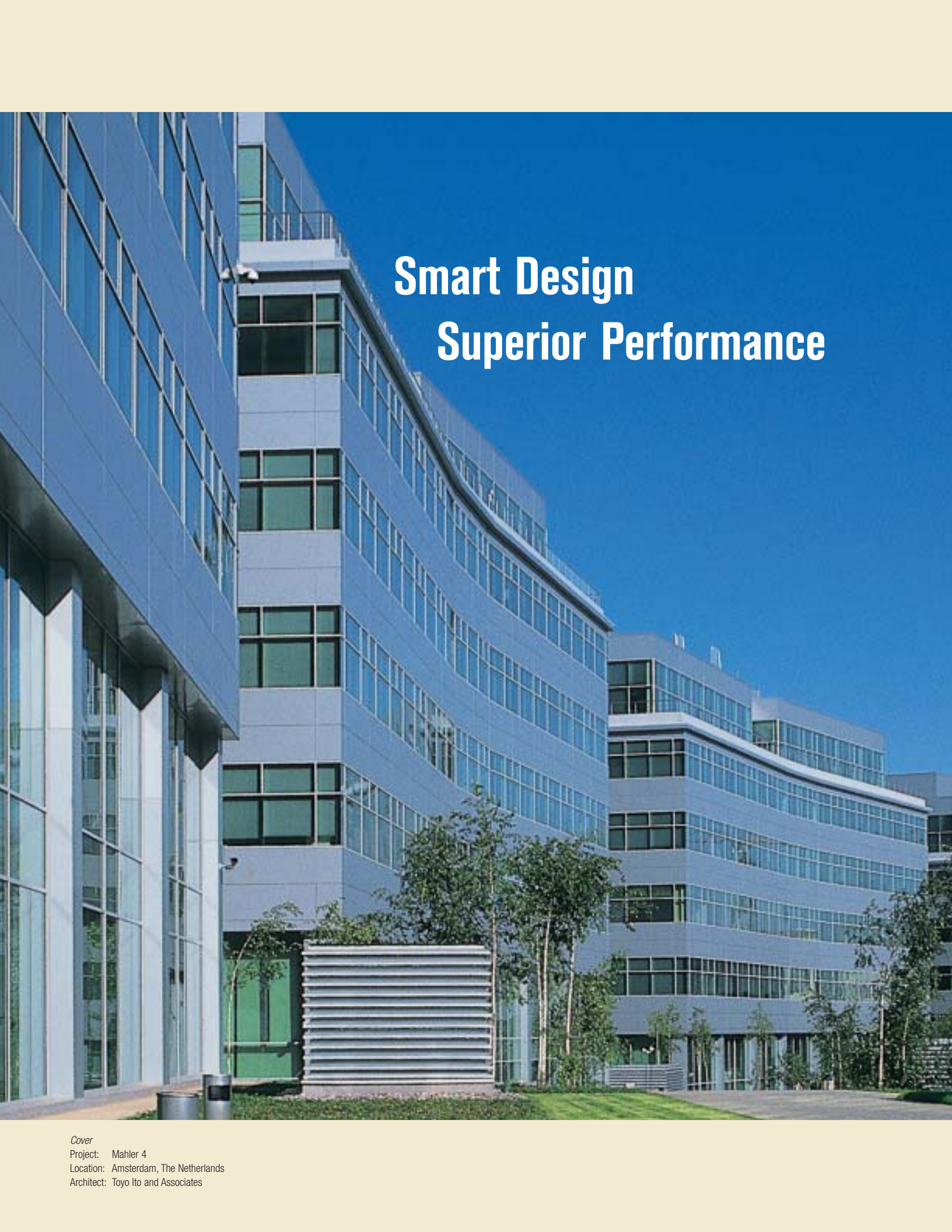
QuadroClad™ Façades



**HunterDouglasContract**

FAÇADES





# Smart Design Superior Performance

*Cover*

Project: Mahler 4

Location: Amsterdam, The Netherlands

Architect: Toyo Ito and Associates

With more than 40 years of worldwide experience in developing and manufacturing façades, Hunter Douglas systems meet the highest standards for commercial, hospitality, industrial, and institutional applications.

QuadroClad™ metal, glass, and resin façades combine superior performance with a monolithic aesthetic. They're the smart way to make your mark.

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Project: Krylatsky Hills Business Park  
Location: Moscow, Russian Federation  
Architect/Specifier: ABD Limited and NBBJ East

## Principles of Rainscreen Façades

A rainscreen façade – often called a ventilated façade – does not try to seal the exterior of a building with a physical barrier to water. This is unlike many other façade systems, which depend on weather-barrier walls created using fitted joints and liberal applications of caulk. Such barrier-wall systems require significant effort to construct and maintain.

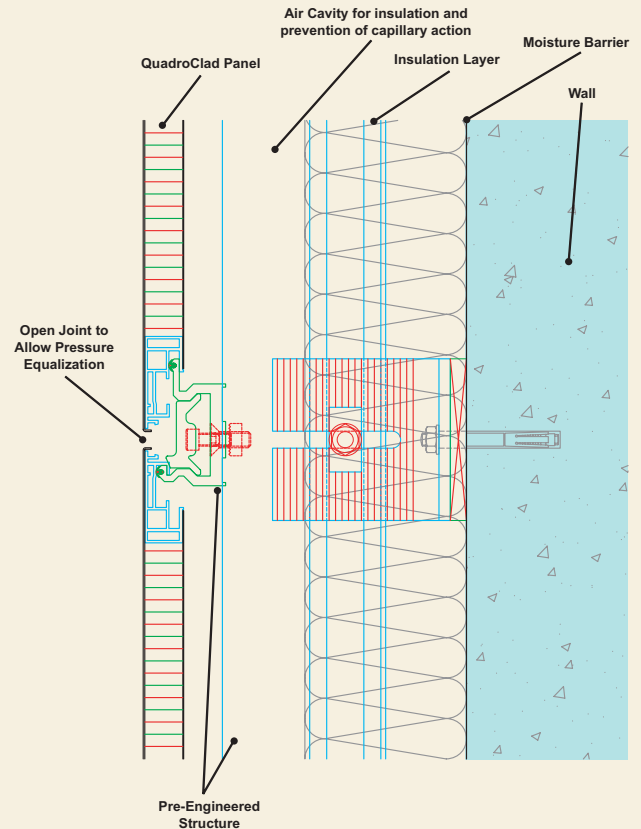
Instead, rainscreen façades mount a semi-open screen some distance from a building that allows a little water in, but only as far as the back surface of the screen. Between this outer layer and the inner building shell sits an envelope of air.

The open joints of ventilated/rainscreen façades allow air to flow freely into and out of this envelope area. The unrestricted air movement produces three very useful benefits:

- First, the flow eliminates pressure differences that would tend to blow water further in. This means little if any water makes it across the air gap to reach the inner shell.
- Second, the air flow dries any moisture within the envelope area, such as rain that might be trickling down the back of the outer shield.
- Third, the air envelope acts as an insulating barrier by minimizing thermal bridges and preventing heat buildup within the envelope.

The result is a more sustainable, functional façade that does not require sacrifices in design.

## ELEMENTS OF A VENTILATED FAÇADE





## A Short History of Rainscreen Technology

Ventilated façades have been used for centuries:

- Farmers in Norway invented the rainscreen concept long ago, creating simple board walls with vented joints and openings at top and bottom. These early examples often screened existing barns or other structures on the most exposed elevations.
- Board-and-batten constructions represent another basic ventilated façade. This type of construction has been used in North America and elsewhere for at least 100 years. It was often applied to log-built structures such as homes and barns.
- J.F. Straube cites the 30-story Alcoa building in Pittsburgh, built in 1952, as the first example of a structure with a “pressure-moderated” (ventilated) outer wall. At this point, designers were looking for ways to reduce the weight of outer cladding surfaces with drained and ventilated cavities.
- In the 1960s and 1970s, a number of researchers studying rainwater penetration started discussing how pressure-equalized walls would reduce water leakage. They started focusing on ways to create “two-stage weather tightness,” with the outer ventilated wall acting as a “rain screen,” and the inner wall providing insulation and load bearing.
- Hunter Douglas introduced its first metal façade system in Europe in the 1970s and has refined and expanded its offering significantly over the past four decades.
- The company introduced the QuadroClad™ façade in the 1990s, using honeycomb technology borrowed from the aerospace industry to create strong, flat, lightweight panels.

### *Opposite page*

Project: Arora International Hotel  
Gatwick / Crawley, United Kingdom  
Architect: Arora Development

### *Right*

Project: Almeria, Zagreb, Croatia  
Architect: Mr. Marijan Pivac, Office 3P



## QuadroClad™ Façades

The QuadroClad™ system is a unique, open-jointed cladding system based on the principles of rainscreen façades. This ventilated system is engineered to deliver both outstanding looks and excellent functionality. The QuadroClad™ system represents a total solution that combines a customizable line of panels with a versatile support structure.

QuadroClad™ façades allow architects to create unique designs that will continue to perform even in severe environmental conditions. All components have been extensively tested for corrosion resistance, insulation, ventilation, fire resistance, and wind-load performance.



### METAL PANELS

Lightweight, strong panels in a variety of colors and finishes



### GLASS PANELS

Frameless glass panels with options for silk-screening, fritting, and more



### RESIN PANELS

Flexibility in color, light, and shape, developed in collaboration with 3Form

### QuadroClad™ Panels

Flexibility in material, size, and shape allows QuadroClad™ panels to create a wide range of visual effects:

- Metal panels in many colors and finishes
- Glass panels with options for tinting, fritting, and more
- Resin panels incorporating nearly any design possibility for light transmission, color, and shape
- Sizes up to up to 1,500 mm x 4,500 mm (59 in x 117 in)
- Panels available in a variety of shapes, tapers, and curves

All panels can be used together on the same façade.

### QuadroClad™ Substructure

A complete, versatile system, QuadroClad™ supports attach to almost any type of new or existing superstructure:

- Applicable to both low- and high-rise construction
- Ideal for re-cladding and refitting opportunities
- Outstanding durability and low maintenance
- Excellent wind-load performance

## Metal Panels

QuadroClad™ aluminum panels feature flat or curved planes for a smooth, uniform appearance. Durable aluminum panels are available in either anodized or painted finishes and a wide range of colors. Installation is executed on the same substructure as glass and resin panels, allowing all panels to be used in combination.

Panels constructed with fabrication technology used in aircraft to produce lightweight, extremely strong panels. Each panel sandwiches a stable metal honeycomb between two skins of smooth, coil-coated aluminum. Layers are bonded together with high-quality adhesives to form a monolithic mechanical construction.

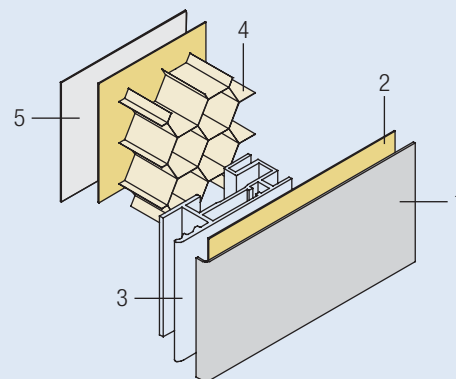
The result: Optimal quality control. Maximum flexibility. The ability to withstand the most severe environmental conditions.



### SPECIFICATIONS

- External skin** ..... Aluminum coil-coated with Luxacote® or PVF2 finish (0.95 mm/~0.037 in). Other base metals and finishes available.
- Internal skin** ..... Aluminum coil-coated with protective finish (0.5 mm/~0.02 in).
- Core structure** ..... Aluminum honeycomb core.
- Edge extrusion** ..... Extruded aluminum, mitered and crimped to seal each panel, with integrated fixing detail for easy attachment to support structures.
- Wall bracket** ..... Available for insulation thicknesses of 100 mm, 150 mm, and 200 mm (4 in, 6 in, 8 in). Slotted holes allow for adjustment of +/- 25 mm (+/- 1 in) in depth and +/- 10 mm (+/- 0.375 in.) in horizontal plane.
- Support Rail** ..... Extruded aluminum profile for maximum rigidity where required. Rails also serve as vertical drainage channel. Standard length 7,200 mm (283.5 in).
- Fixing plates** ..... Fully adjustable in vertical directions, with integrated anti-vibration gaskets.
- Panel sizes** ..... Complete range of sizes up to 1,500 mm x 4,500 mm (59 in x 117 in).
- Windows** ..... Twin-color powder-coated or anodized aluminum profiles. Windows are thermally improved and incorporate a range of mullions and transoms.

### PANEL COMPOSITION

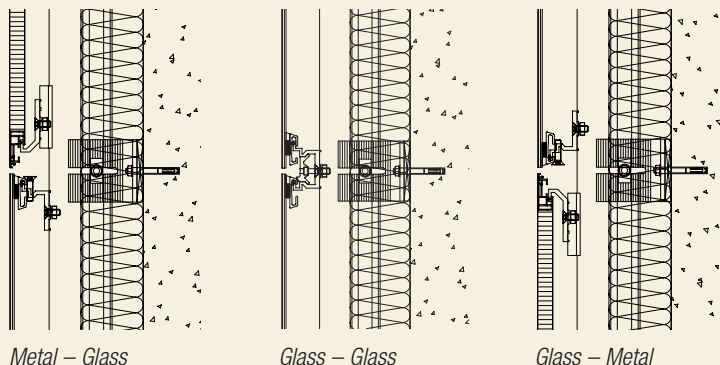


- 1 = Pre-coated and roll formed aluminum external skin  
2 = Adhesive film  
3 = Aluminum extrusion  
4 = Aluminum honeycomb  
5 = Pre-coated aluminum internal skin

Project: Schulhastrakt MPS Siebenen, Zürich, Switzerland  
 Architect: Stähli AG



## PANEL COMBINATIONS



## Glass Panels

Our glass panels offer aesthetic versatility and equally functional coverage. The QuadroClad™ glass system enables a wide range of design possibilities, including silk-screening, shading/fritting, and coating.

Frameless glass panels have brackets bonded to the back to conceal the fixing mechanisms and reduce installation time. Installation is executed on the same substructure as metal and resin panels, allowing all panels to be used in combination.

Fully integrated with our engineered carrier system, this system is ideal for facade retrofits, allowing a functional and aesthetic makeover of an entire building exterior, including over-cladding without the need for window replacement.

## SPECIFICATIONS

- Panel composition** ... Heat-strengthened or laminated glass to meet applicable building codes.
- Wall bracket** ..... Available for insulation thicknesses of 100 mm, 150 mm, and 200 mm (4 in, 6 in, 8 in). Slotted holes allow for adjustment of +/- 25 mm (+/- 1 in) in depth and +/- 10 mm (+/- 0.375 in) in horizontal plane.
- Support Rail** ..... Extruded aluminum profile for maximum rigidity where required. Rails also serve as vertical drainage channel. Standard length 7,200 mm (283.5 in).
- Fixing plates** ..... Fully adjustable in vertical directions, with integrated anti-vibration gaskets.
- Panel sizes** ..... Complete range of sizes up to 1,500 mm x 4,500 mm (59 in x 117 in).
- Windows** ..... Twin-color powder-coated or anodized aluminum profiles. Windows are thermally improved and incorporate a range of mullions and transoms.



Project: Istragrafika, Istria, Croatia  
 Architect: Prof. Kincl



## Resin Panels

Our resin panels offer unprecedented design flexibility to create customized façades with new opportunities to play with light, color, and shape.

Developed in collaboration with 3Form – the industry leader in high-performance, environmentally friendly resins – these panels integrate seamlessly with our metal and glass lines. Durability and excellent impact strength make them suitable for nearly any application. Installation is executed on the same substructure as metal and glass panels, allowing all panels to be used in combination.

QuadroClad™ resin panels by Hunter Douglas... the most versatile alternative to traditional cladding materials.

Featuring  *ecoglass PC*

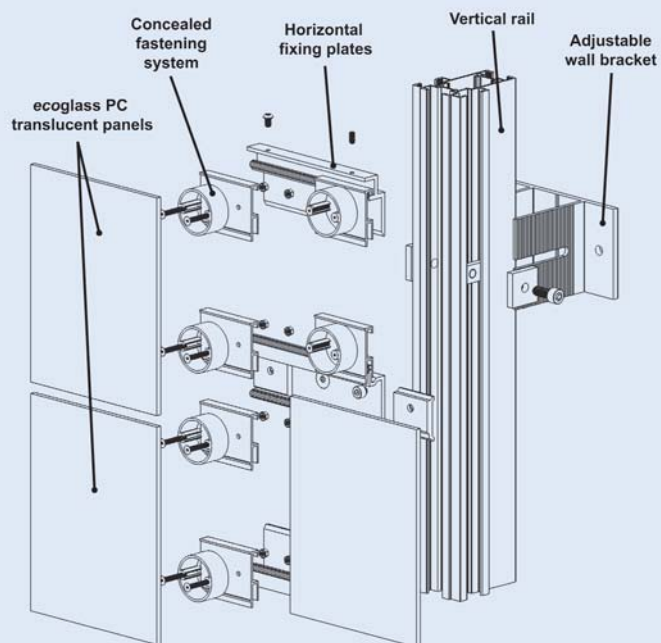


RESIN PANELS

### SPECIFICATIONS

- Panel composition** ... *ecoglass PC* (high-impact polycarbonate with 40% recycled content)
- Wall bracket** ..... Available for insulation thicknesses of 100 mm, 150 mm, and 200 mm (4 in, 6 in, 8 in). Slotted holes allow for adjustment of +/- 25 mm (+/- 1 in) in depth and +/- 10 mm (+/- 0.375 in) in horizontal plane.
- Support Rail** ..... Extruded aluminum profile for maximum rigidity where required. Rails also serve as vertical drainage channel. Standard length 7,200 mm (283.5 in).
- Fixing plates** ..... Fully adjustable in vertical directions, with integrated anti-vibration gaskets.
- Panel sizes** ..... Complete range of sizes up to 1,500 mm x 4,500 mm (59 in x 117 in).
- Windows** ..... Twin-color powder-coated or anodized aluminum profiles. Windows are thermally improved and incorporate a range of mullions and transoms.

### RESIN SYSTEM WITH CONCEALED FASTENERS





QUADROCLAD™  
SUBSTRUCTURE

QuadroClad™ support structures were designed to allow maximum customization with minimal custom engineering. Over the past two decades, this durable, versatile system has been applied to a wide variety of low- and high-rise structures. The QuadroClad™ system is ideal for both new construction and re-cladding projects.

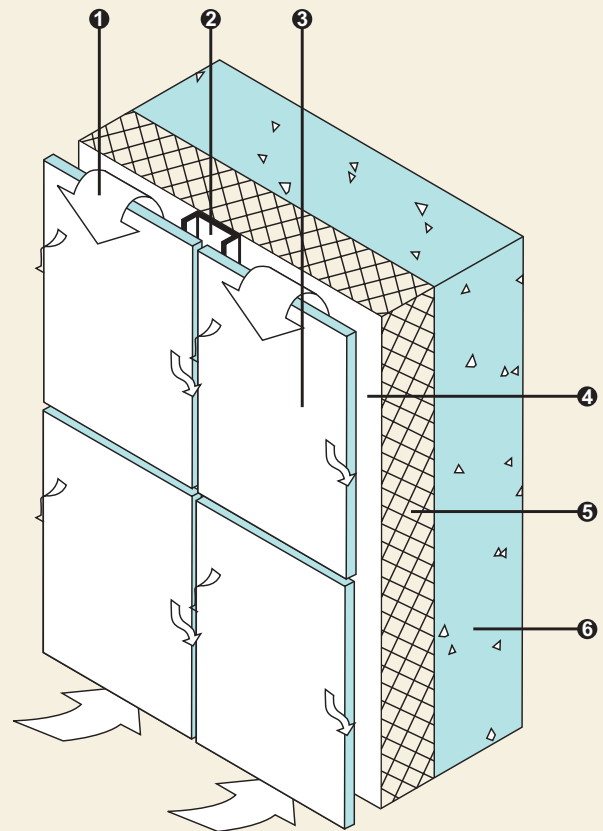
Project: Avenue Mall  
Location: Zagreb, Croatia

## Key Features

- Simple, adjustable fixing components speed up installation, allowing wind- and waterproof condition at earlier stages of construction.
- Tightly controlled joint widths ensure uniform appearance between panels.
- Integrated flush/recessed windows, doors, and solar-control to reduce the number of substructure components.
- Standardized bracket attachments for easy customization and combinations of metal, glass, and resin panels on the same façade substructure.
- Support for a wide range of application details (see page 11).
- Suitable for sloping façades, external soffits, and ceilings.
- Full CAD and project management services are available.

The QuadroClad™ system's proven installation process has three simple steps:

1. Install flush/recessed QuadroClad™ window frames and seal them to the structure using integrated damp-proof membranes. Then complete application of thermal insulation.
2. Hang QuadroClad™ metal, glass, and/or resin panels from the window frames (or support tracks if necessary).
3. Lock panels into place to control thermal expansion. Panels can be removed and re-installed individually in any order to suit the construction plan.



- |                            |                              |
|----------------------------|------------------------------|
| <b>1. Ventilation</b>      | <b>4. Cavity</b>             |
| <b>2. Drainage Channel</b> | <b>5. Thermal Insulation</b> |
| <b>3. QuadroClad Panel</b> | <b>6. Loadbearing Wall</b>   |





### WIND LOAD SPAN TABLE

QuadroClad™ façades have been engineered and tested to meet stringent requirements for wind-load performance.

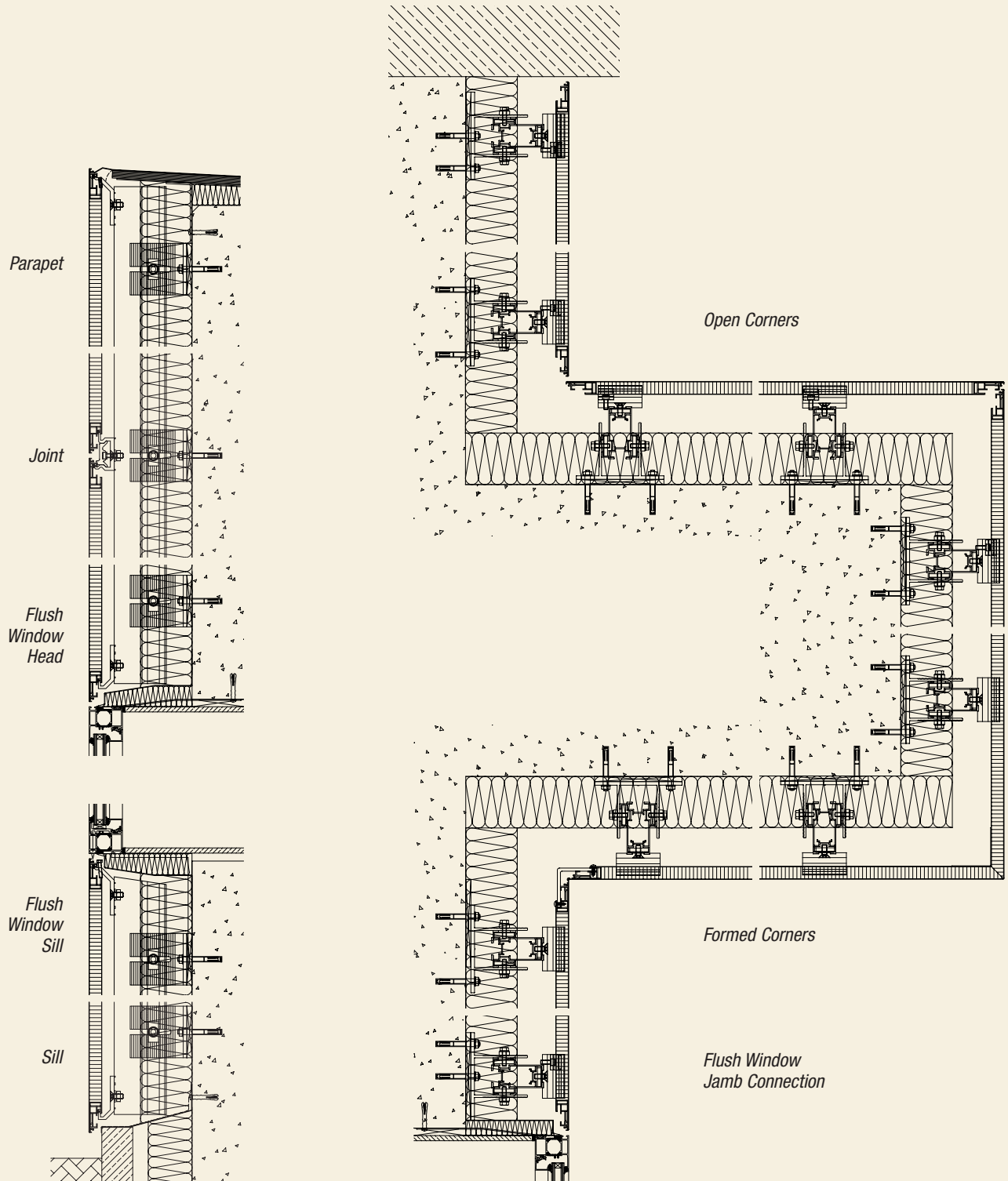
<b>Windload</b> N/m <sup>2</sup> (PSI) <i>(working load)</i>	<b>Span</b> mm (in) <i>(horizontal distance between vertical rails)</i>		
	<b>Single</b>	<b>Double</b>	<b>Multi</b>
<1000 (0.145)	1900 (74)	2050 (81)	2050 (81)
1000-1500 (0.145-0.218)	1750 (69)	1350 (53)	1350 (53)
1501-2000 (0.218-0.290)	1650 (65)	1000 (40)	1000 (40)



Project: Burgers Ergon, Apeldoorn, The Netherlands  
 Architect: Artec Architecten

## SELECTED APPLICATION DETAILS

The QuadroClad™ system supports a wide range of solutions for parapets, sills, formed corners, open corners, and more. Shown below left, a vertical section, and below right, a horizontal section.





Project: Rolls-Royce Aerospace  
Location: Glasgow, United Kingdom  
Architect: Bradford Robertson Architects



Project: Biscuit Company Lofts  
Location: Los Angeles, CA  
Architect: Aleks Istanbulu Architects



Project: Shanghai Automobile Museum  
Location: Shanghai, China  
Architect: IFB Dr. Braschel AG

## Committed to Quality

For the last 80 years, we've worked alongside the architecture and design community, creating some of the world's most recognizable projects. We help create buildings that are comfortable, healthy, and productive, utilizing engineering and manufacturing processes that minimize embodied environmental impact.

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Project: Avenue Mall  
Location: Zagreb, Croatia



Project: Kyneton District Health Service  
Location: Kyneton, Australia  
Architect: Lyons Melbourne

As architects and construction professionals expand the boundaries of design, Hunter Douglas continues to work alongside them. Our façade systems have been developed to assist the architects of today in designing the projects of tomorrow.

## Innovative Products Make Innovative Projects

# Learn More

Unprecedented Protection  
**LUXACOTE**  
for exterior application



- Call 877-994-6246 to speak with a façade specialist
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