



VENTILATED FACADES



ARCHITECTURAL SOLUTIONS

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INTRODUCTION

THE WORLD IS DRIVEN AND PULLED ALONG BY
IDEAS, NOT BY MACHINERY. BEHIND ALL IDEAS
ARE PEOPLE, OUR MAIN ASSET.



WHO WE ARE

ULMA ARCHITECTURAL SOLUTIONS FORMS PART OF THE **ULMA GROUP**, ONE OF THE LARGEST BUSINESS GROUPS IN THE NORTH OF SPAIN, WITH NEARLY 50 YEARS OF EXPERIENCE IN THE MARKET AND A CLEAR COMMITMENT TO INNOVATION, EMPLOYMENT AND ADDED VALUE.

THE ULMA GROUP ALSO FORMS PART OF THE **MONDRAGON CORPORATION**.

The Group currently has **an extensive network of subsidiaries spread over countries** in the five continents: Germany, Argentina, Brazil, Chile, China, United States, France, Holland, Mexico, Poland, South Africa, etc. In 2015 we provided **direct employment to over 4,500 people** with an annual turnover of **over 700 million Euros**.



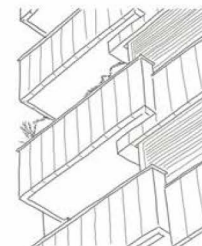
ULMA ARCHITECTURAL SOLUTIONS' SPECIALIZATION IN **PREFABRICATED BUILDING SYSTEMS**, HAS ALLOWED THE DEVELOPMENT OF A WIDE RANGE OF SOLUTIONS AIMED PRIMARILY AT FOUR SEGMENTS:



ARCHITECTURAL
PRECAST

ARCHITECTURAL PRECAST

This line has an extensive **Range of Standard Solutions** at competitive prices, with a complete offering of resources as window sills, copings, Slab Faces, etc. Besides they offer **Customized Solutions very appropriate for Restoration**.



DRAINAGE
SYSTEMS

DRAINAGE SYSTEMS

Prefabricated Systems for ULMA Linear **Drainage** are the result of combining our material, polymer concrete, with its prefabricated capacity, which gives it an unbeatable ease of installation and manpower saving. All of our drainage channels are designed and fabricated in accordance with **Standard EN-1433**. It offers a complete range of drainage solutions and also for electrical conduits and beaconage.



VENTILATED
FACADES

VENTILATED FACADES

In this dossier we present the building system we have developed at ULMA Architectural Solutions. This system can be used both in new buildings and in restorations. We have a customized solution for each one.



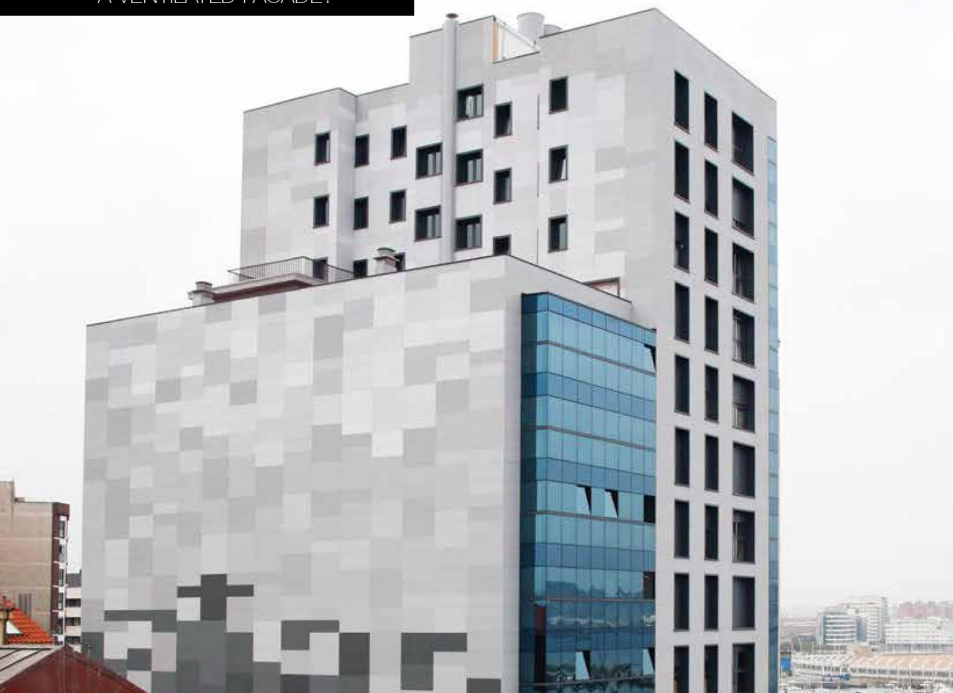
021

WHAT IS A VENTILATED FACADE

THE VENTILATED FACADE IS A **COATING SYSTEM OF THE BUILDING WALLS WHICH LEAVES A VENTILATED CHAMBER BETWEEN THE COATING AND THE INSULATION.**

In European academic community, it is considered as the most efficient system for resolving the building's insulation, **eliminating the unwanted thermal bridges** as well as the **condensation problems** and so achieving an excellent thermal-hygrometric behaviour of the building.

WHAT IS A VENTILATED FACADE?



VENTILATED FACADES

With this system a continuous insulation can be achieved for the exterior of the building, protecting the interior sheet as well as the slab edges. In the ventilated chamber, due to the heating of the air layer of the intermediate space compared to the environment air, the so called "chimney effect" is produced which **generates a continuous ventilation in the chamber**. Appropriately dimensioned the air entry and exit, a constant evacuation of water vapour coming both from the interior as well as the exterior of the building is achieved, keeping the insulation dry and obtaining a better performance of the insulation and **big savings in energy consumption**. The Ventilated Facade, additionally to impact in the

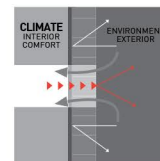
energy consumption savings of the building, eliminates the direct radiations or the bad weather on walls or slabs protecting them from the pathologies which affect buildings constructed with traditional systems.

The constructive system that we have developed in ULMA Architectural Solutions **increases the useful surface of your project without the need of a protective sheet**. Also, it constructs perfect planes allowing the correction of possible planar defects of the traditional and structural parameters. It is a safe and light system that distributes its loads on the resistance elements of the building, no on the protections.



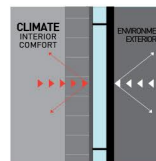
STACK EFFECT ENERGY EFFICIENCY

INTERIOR INSULATION TRADITIONAL FACADE



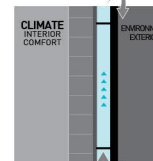
Possible thermal bridges

EXTERIOR INSULATION VENTILATED FACADE



Elimination of thermal Bridges

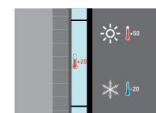
STACK EFFECT ENERGY EFFICIENCY



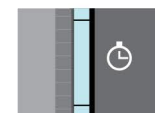
Air flow renewable resource



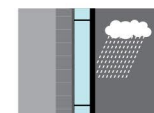
ADVANTAGES OF THE VENTILATED FACADES



Energy Savings Thermal insulation. Reduction in heat dispersal. Less heat absorption in warm months. Lower storage costs.



Technical and Aesthetic Durability Unbeatable results in terms of tackling corrosion or deterioration owing to pollution. No absorption of dust or dirt. Simple maintenance with soap and water. Promotes humidity dispersal. Chromatic stability with atmospheric agents.



Protection from Humidity Protection of cladding and floor structures from the entry of rainwater and from frost. Corrosion-proof primary and secondary structure material.



Healthier Environment Increase in user comfort in accordance with the basic hygiene, health and environmental protection requirements.

AND FOR RESTORATION?

Ideal for Restoration Polymer concrete affords major advantages to undertake facade restoration: the lightness, flexibility and adjustability at the works site of the material allows a wide range of adaptations to be carried out, applying sheets in different formats. What's more, there is the possibility of installing the ventilated facade without the need to remove the current covering.

Image Renewal We have a wide range of shapes, colors and textures which will allow your buildings image to be overhauled, bringing about an amazing transformation.

Increase in Assets After the facade restoration you will have achieved an increase in the value of your property which far outweighs the cost of the works. Restoring the facade of your building will considerably increase the value of your assets, not only transforming its appearance but also enhancing the urban setting.

Improves the Comfort level ULMA polymer concrete ventilated facades provide thermal insulation, thereby reducing heat dispersal in cold months and heat absorption in warm months, achieving comfortable temperatures inside the buildings.



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PRODUCT RANGE

VANGUARD.....pg.16-65

Adaptability and Flexibility

creAtive.....pg.66-85

Endless Customization

Textures..... pg.82

VANGUARD



ADAPTABILITY AND FLEXIBILITY YOUR PROJECT IN INCHES

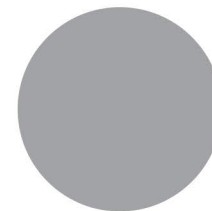
VANGUARD RANGE GIVES A SOLUTION TO SUIT EACH PROJECT, GIVING THE POSSIBILITY OF FLEXIBLE PANEL FORMATS, ENABLING PANEL CUTS AS NEEDED AND OFFERING THE MINIMUM JOINT ON THE MARKET. ADAPTABILITY, FLEXIBILITY AND QUALITY ASSURANCE ARE THE KEYS THAT DEFINE OUR MOST INNOVATIVE RANGE.



TEXTURES

Air

A Smooth surface that adds continuous uniform finish; an inspiring blow from floor to heaven.

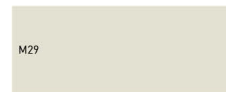
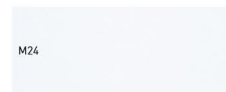


COLOURS

DARK COLOURS



LIGHT COLOURS



CREAM COLOURS





TEXTURES

Earth

Natural appearance of sculpted land and stone carved by the course of time.

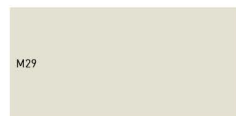


COLOURS

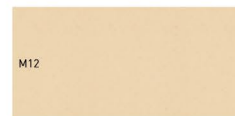
DARK COLOURS



LIGHT COLOURS



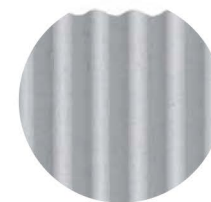
CREAM COLOURS



TEXTURES

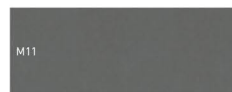
Water

Endless possibilities of creating dynamic effects and nuances of colour. Thousand colours in one colour.

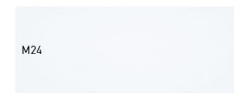


COLOURS

DARK COLOURS



LIGHT COLOURS



COLOUR

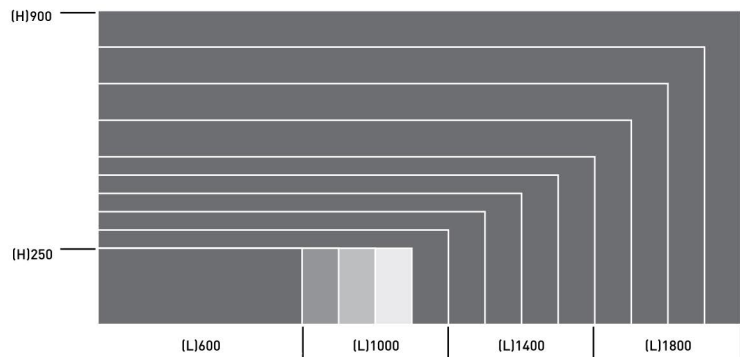




FORMATS AND THICKNESSES

HEIGHT (H):

From 250 mm to 500 mm in multiples of 50 mm and from 500 mm to 900 mm in multiples of 100 mm. Cut to any size.

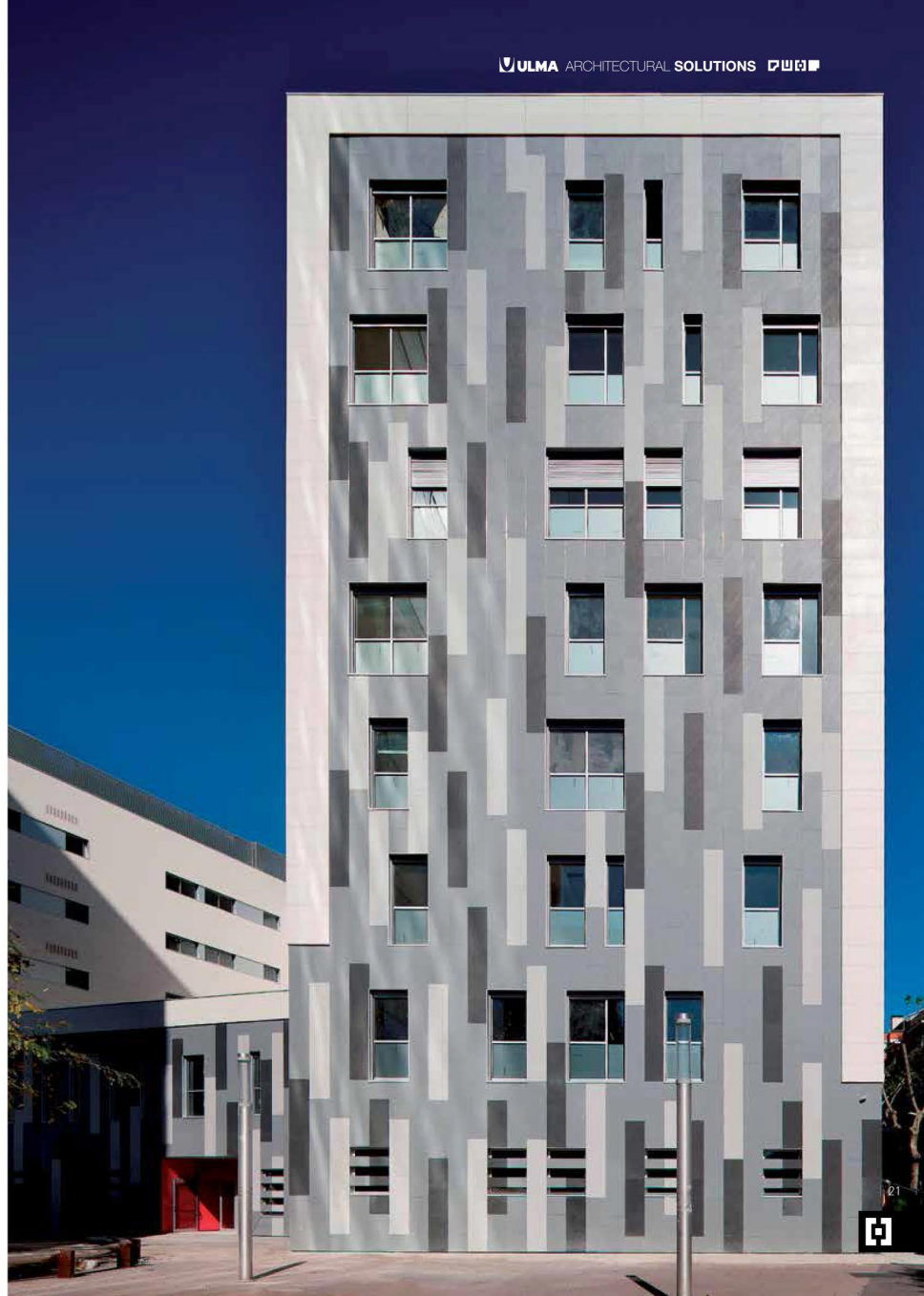
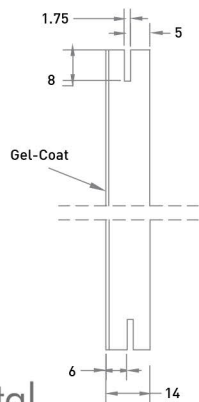


LENGTH (L):

From 600 mm to 1800 mm in multiples of 100mm.

Tolerancias longitudinales	Tolerancias en altura	Peso en la placa
$L \pm 2 \text{ mm}$	$H \pm 1 \text{ mm}$	de 33 kg/m ² .

THICKNESS 14 MM

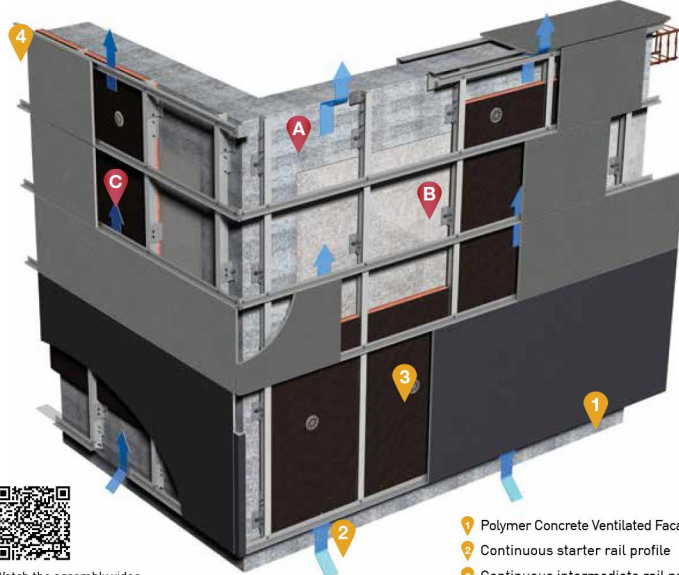


There are 2 installation systems: Vertical System and Horizontal System.

HORIZONTAL SYSTEM

HORIZONTAL INSTALLATION SYSTEM

- FLOOR SLAB
- BASE WALL
- THERMAL INSULATION



Watch the assembly video.

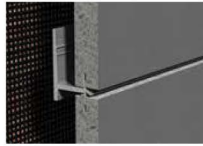
- Polymer Concrete Ventilated Facade Panel by ULMA
- Continuous starter rail profile
- Continuous intermediate rail profile
- Continuous inverted starter rail profile

INSTALLATION SYSTEM

Anti rodent grid



Rail profile detail



Rail Profile Joint



Air output from chamber



Connection at floor slab and base wall

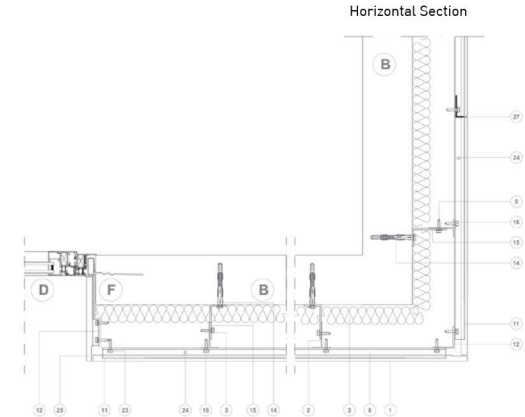
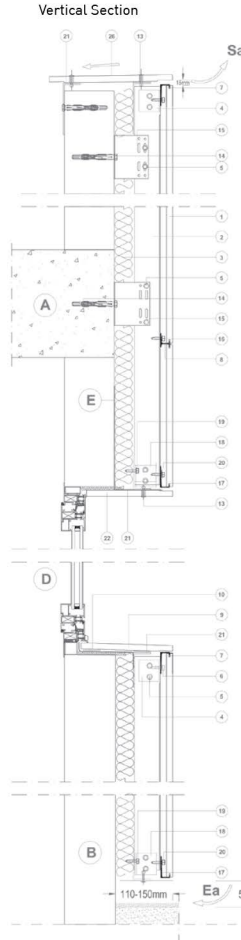
Sliding point bracket



Fixed point bracket

TECHNICAL INFORMATION

VENTILATED FACADE HORIZONTAL SYSTEM



- A: FLOOR SLAB
- B: BASE WALL
- C: SILL WATERPROOFING WITH EPDM MEMBRANE OR SIMILAR
- D: WINDOW
- E: LINTEL WATERPROOFING WITH EPDM MEMBRANE OR SIMILAR
- F: JAMB WATERPROOFING WITH EPDM MEMBRANE OR SIMILAR
- Ea: AIR INLET
- Sa: AIR OUTLET
- 1: Polymer concrete ventilated facade panel by ULMA
- 2: Vertical Tr rail (sub-frame)
- 3: Thermal Insulation
- 4: Support angle for inverted starter rail profile connection to upright
- 5: Self-drilling screw for support angle and carrier bracket connection to upright
- 6: Self-drilling screw for support angle connection to inverted starter rail profile
- 7: ULMA Inverted started rail profile
- 8: ULMA Continuous intermediate rail profile
- 9: Polymer concrete window sill by ULMA
- 10: Silicone adhesive for Polymer concrete window sill by ULMA
- 11: Anti-movement structural silicone at corner panel
- 12: Support angle for corner
- 13: Rivet
- 14: Connection at floor slab and base wall
- 15: Corner bracket to floor slab and base wall
- 16: Self-drilling screw for rail profile connection to upright
- 17: ULMA Starter rail profile
- 18: Anchorage angle for L profile connection to upright
- 19: Self-drilling screw for L profile connection to support angle
- 20: Self-drilling screw for starter rail profile connection to upright
- 21: L profile
- 22: Polymer concrete Lintel by ULMA
- 23: Self-drilling screw for support angle for corner connection to rail profile
- 24: Weep hole
- 25: Polymer concrete window jamb by ULMA
- 26: Polymer concrete coping by ULMA
- 27: Locking piece



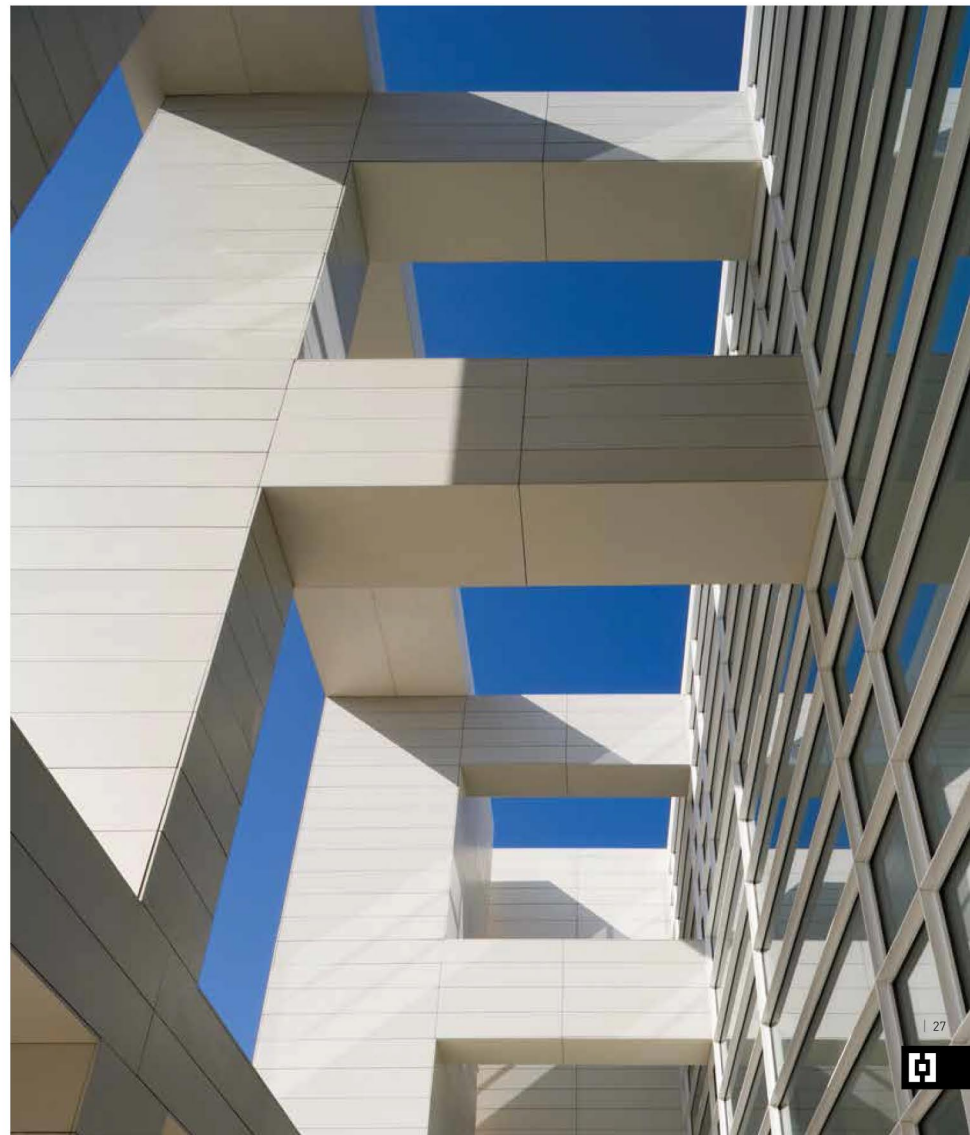
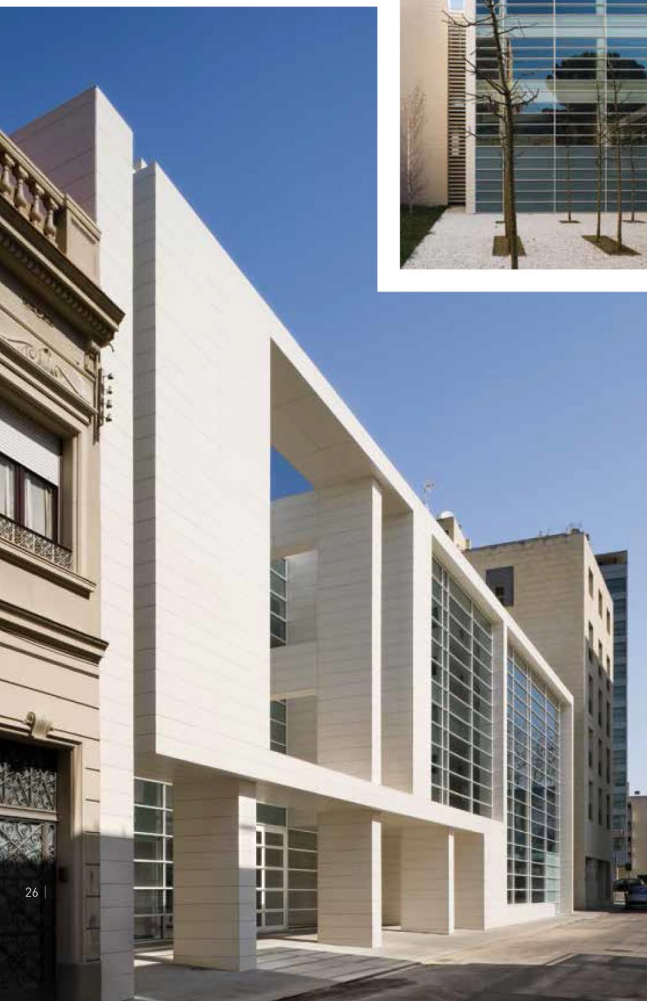
Download DWG & PDF details here.



elemental
Architectural Cladding Specialists

TREASURY ESTATE BUILDING.

Sabadell, Catalunya.
Lluís Ruiz Cortina.
VANGUARD AIR. M05.



NURSERY HENRIKE KNÖRR. Vitoria-Gasteiz, Basque Country.
Bortzaoriz Tejada Donnay, Angel Cadarso de Santillán and Eduardo Moscoso del Prado.
VANGUARD AIR. M21, M11 and M20.

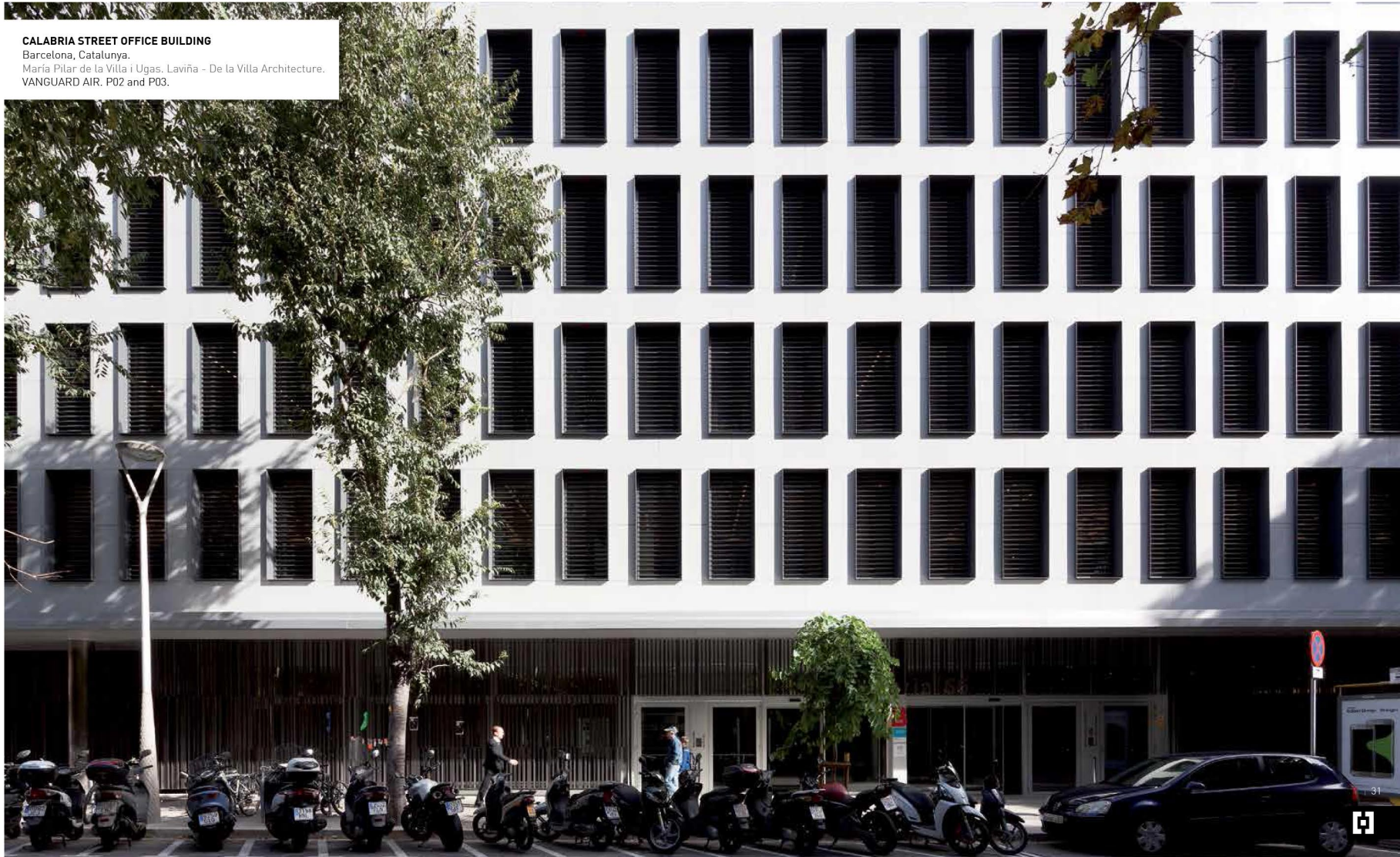


FALGUERA. Vilanova del Vallés, Catalunya.
Frans Masana & Joan Dalamases, MMDM Arquitectes.
VANGUARD AIR. Special colour.



CALABRIA STREET OFFICE BUILDING

Barcelona, Catalunya.

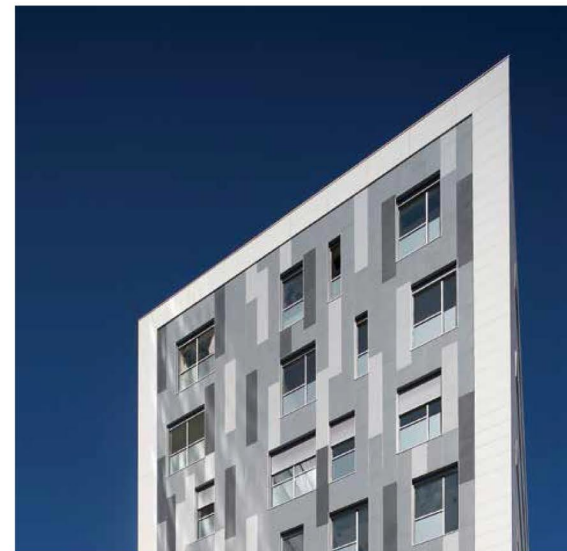
Maria Pilar de la Villa i Ugas. Laviña - De la Villa Architecture.
VANGUARD AIR. P02 and P03.



CEIP EL TREN DE FORT PIENC. Barcelona, Catalunya.
Pich-Aguilera.
VANGUARD AIR, EARTH & Perforated. M05.



NUMANCIA HOSPITAL. Barcelona, Catalunya.
CPVA Arquitectes.
VANGUARD AIR & EARTH. M05, M02, P02 and P03.



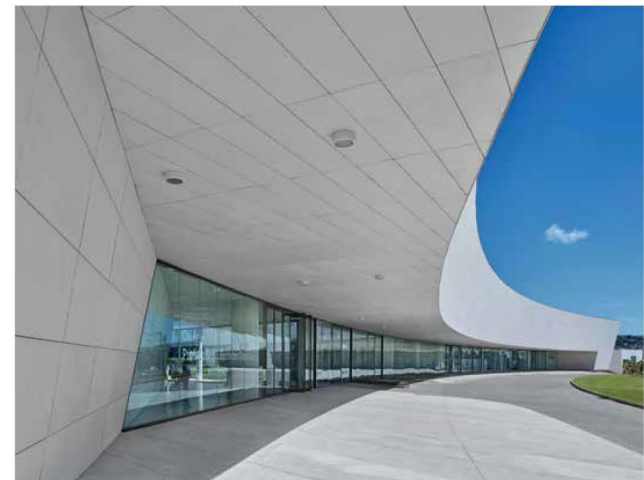


AQUARIUM. San Sebastian, Basque Country.
VANGUARD EARTH. M03.

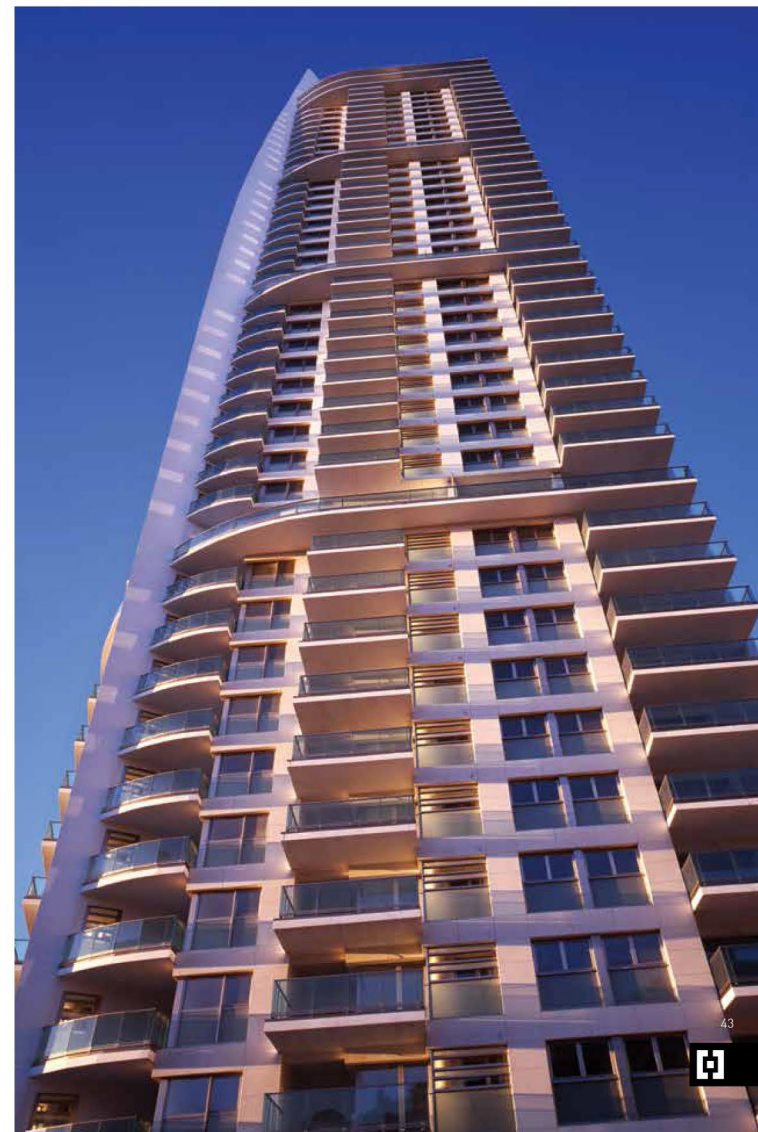


ZERRENNER FOUNDATION.

Sete Lagoas, Brasil.
Gustavo Penna.
VANGUARD EARTH. M12.



LÚGANO TOWER. Spain.
Adolfo Rodríguez.
VANGUARD EARTH. M05.



POLICE CENTER. Lleida, Catalunya.
Mestura Arquitectes.
VANGUARD EARTH. P13.



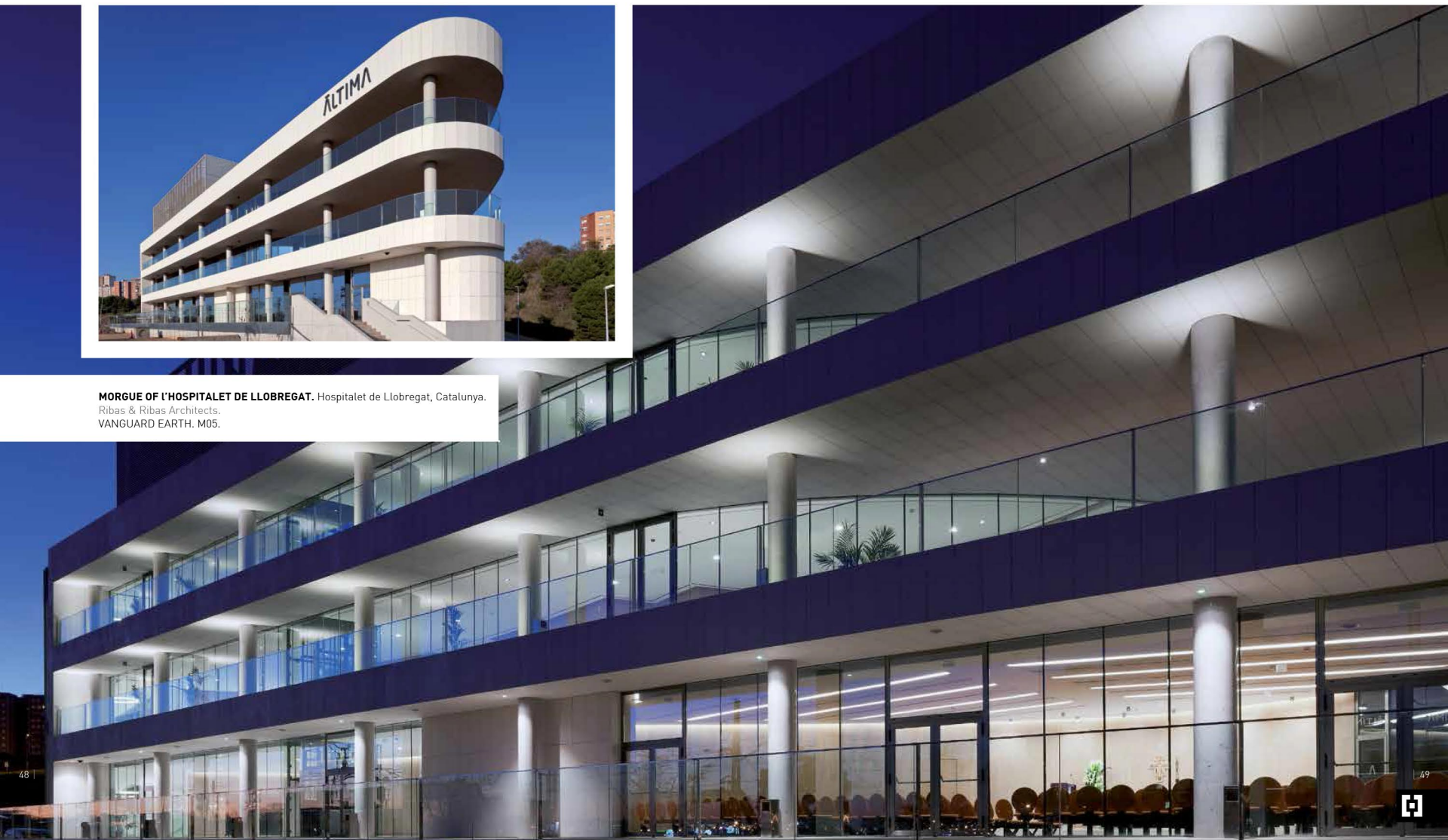


ULMA HANDLING SYSTEMS. Oñati, Basque Country.
LKS Engineering.
VANGUARD EARTH. P11.





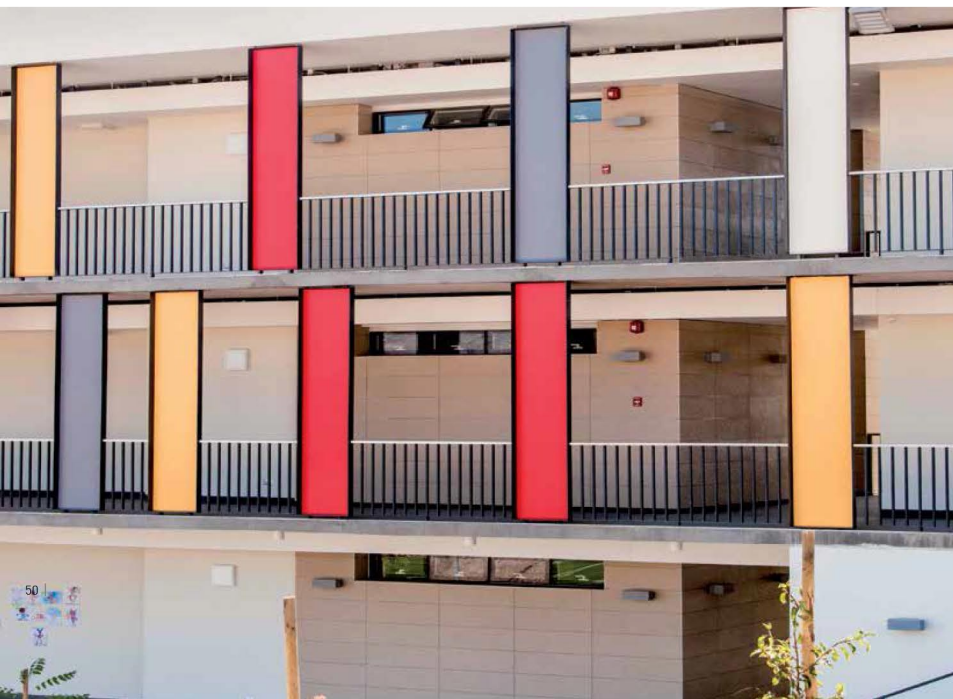
MORQUE OF L'HOSPITALET DE LLOBREGAT. Hospitalet de Llobregat, Catalunya.
Ribas & Ribas Architects.
VANGUARD EARTH. M05.





CHICUREO GERMAN SCHOOL.
 Chicureo, Chile.
 Humberto Eliash & Associates.
 VANGUARD EARTH.
 Special colour.

ESTADO DA BAHIA COURT.
 Salvador de Bahia, Brasil.
 Technical Team of the Court of Bahia.
 VANGUARD EARTH. P03.

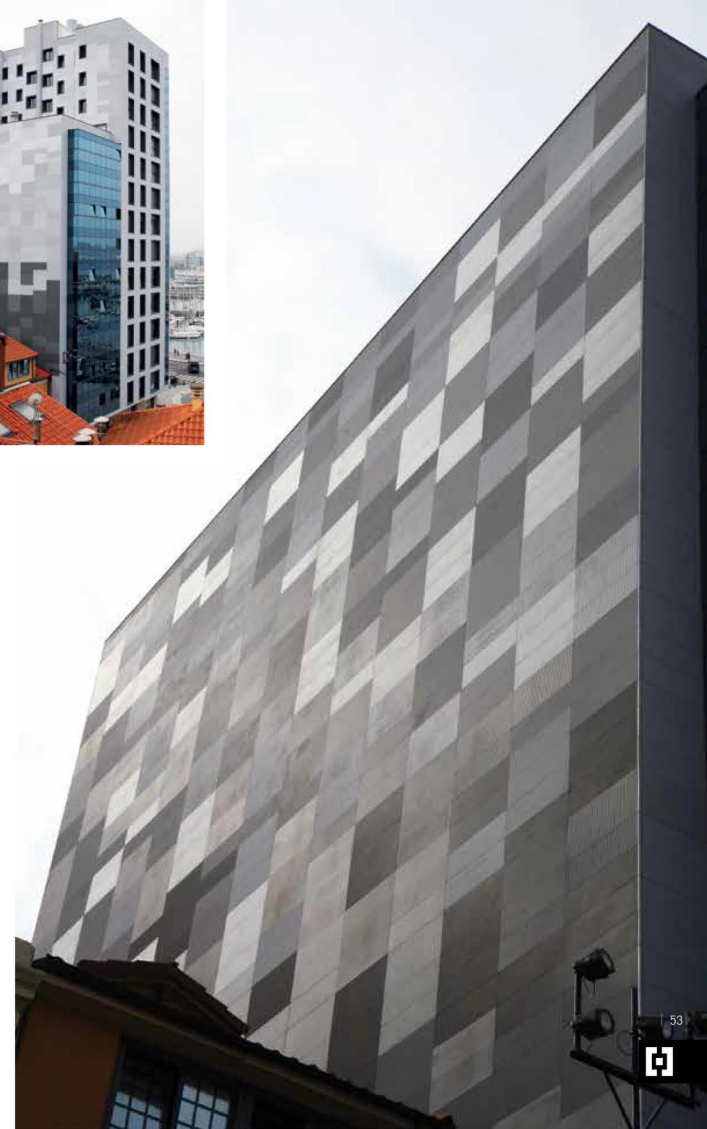


PLAZA MARQUÉS RESIDENTIAL BUILDING. Gijón, Spain.
Jorge Novat Muñiz.
VANGUARD EARTH & WATER.
M06, P09, M11.

BEFORE

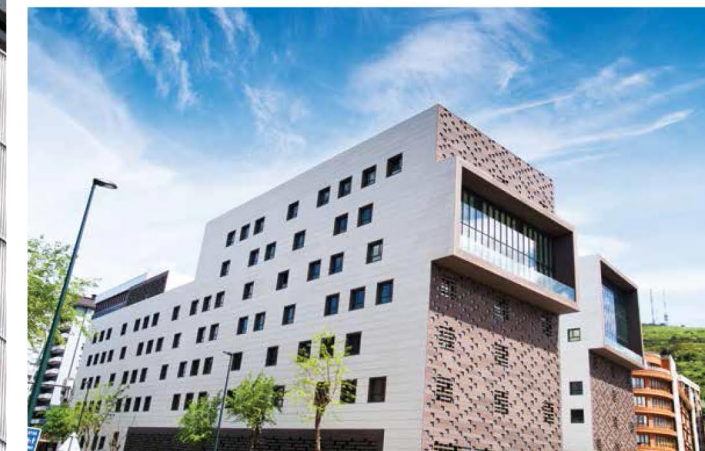


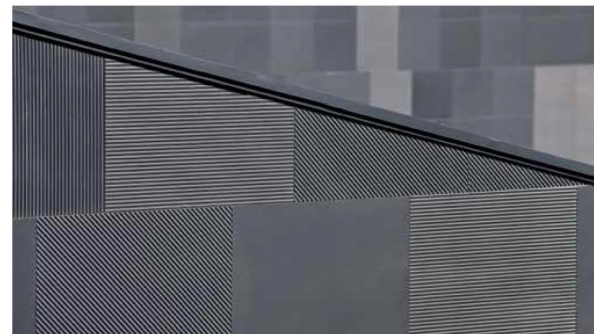
AFTER



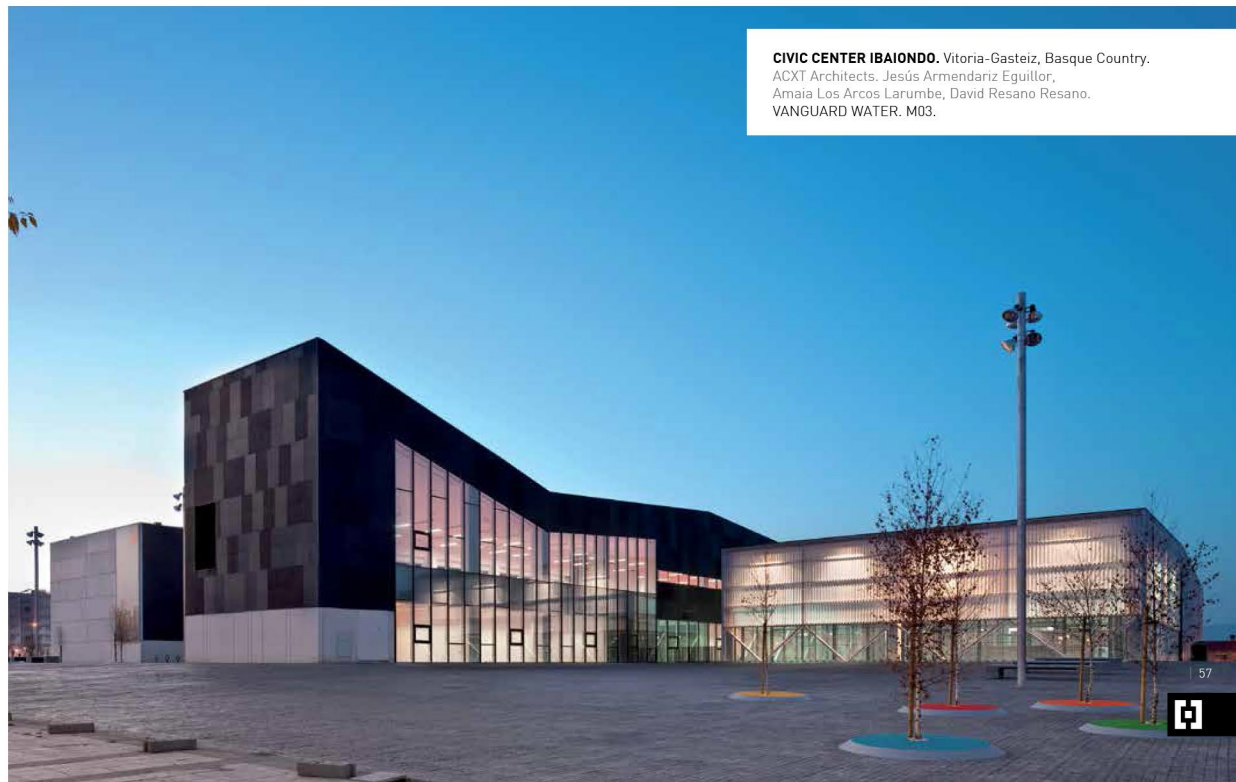


BBK ELDERLY RESIDENCE. Bilbao, Basque Country.
Javier Aja and Beatriz Pagoaga. IDOM.
VANGUARD WATER. M10.





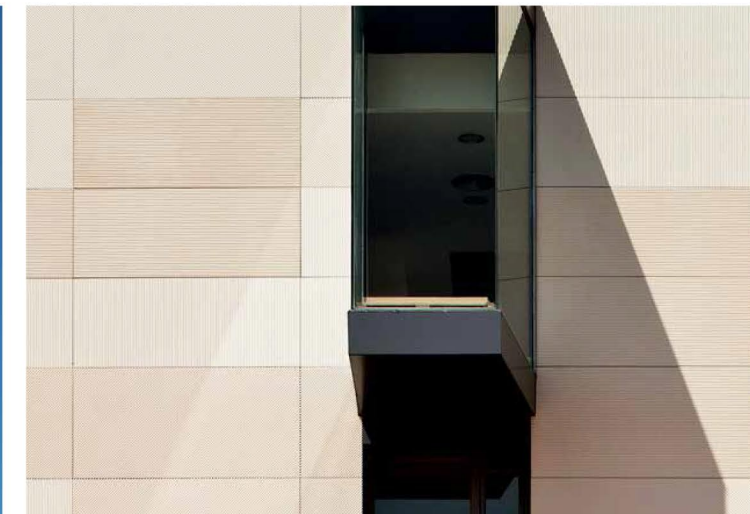
CIVIC CENTER IBAIONDO. Vitoria-Gasteiz, Basque Country.
ACXT Architects. Jesús Armendariz Eguillor,
Amaia Los Arcos Larumbe, David Resano Resano.
VANGUARD WATER, M03.





PROMALAGA OFFICE. Málaga, Spain.
Alfonso Braquehais Lumbreras, Julio Cardenete Pascual,
Jose Ramón Perez Dorao, Juan I. Soriano Bueno.
VANGUARD WATER. M05, M03.





ALCOLEA HOSPITAL. Córdoba, Spain.
José Carlos Rico Córdoba, Jorge Roa
Fernández, Antonio J. Robles Ramírez.
VANGUARD WATER. M05.



FONSANTA COMPLEX. Barcelona, Catalunya.
J.A Marín Sánchez.
VANGUARD WATER, AIR. M26, M27.

BEFORE



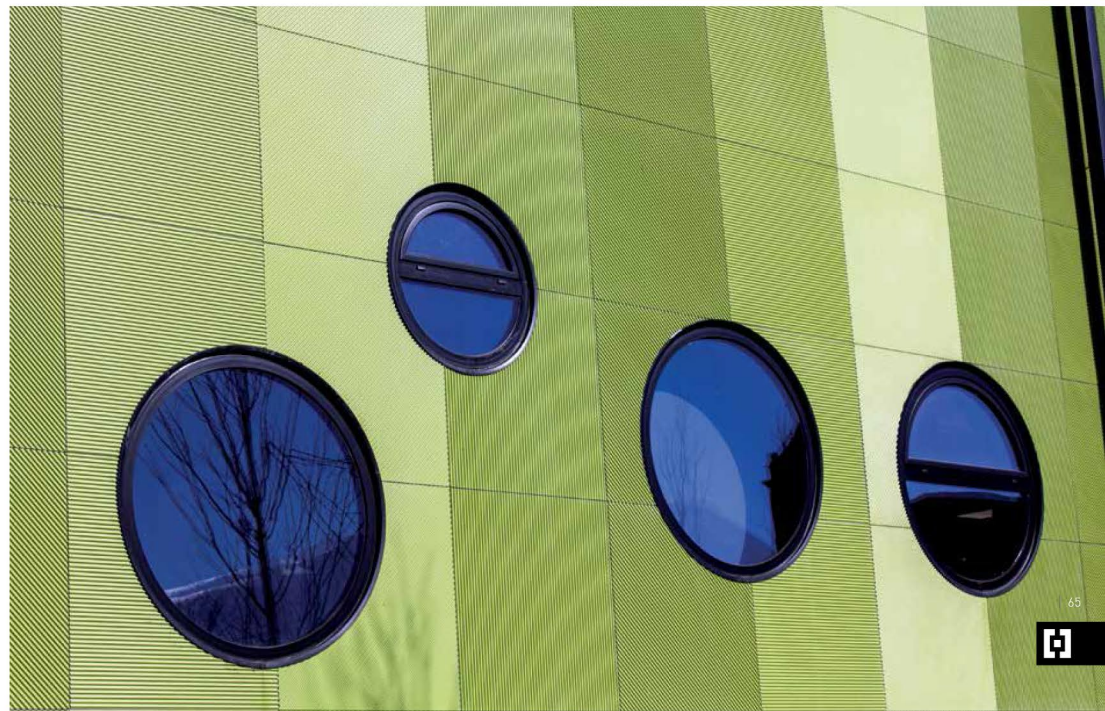
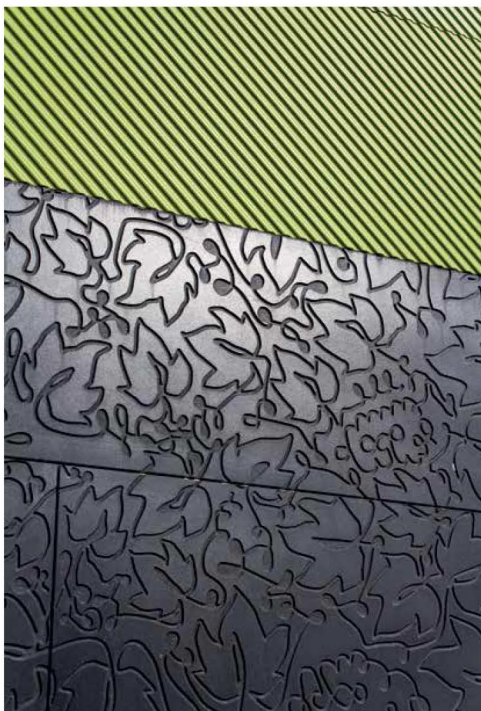
AFTER



For further information.



ZELAIETA. Abadiño, Basque Country.
 Infortur.
 VANGUARD WATER. Special colour. CREAKTIVE Vine Leaf M03.





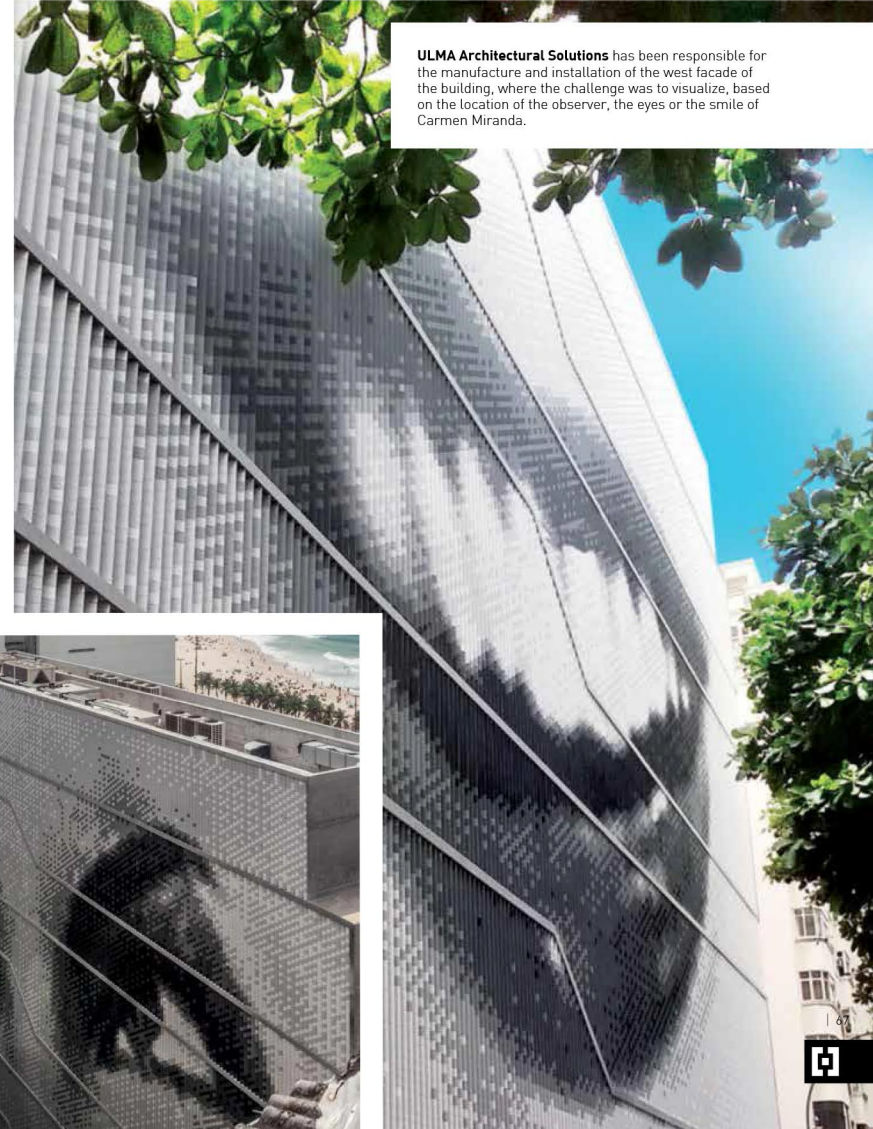
creA^{ti}ve



ENDLESS CUSTOMIZATION POSSIBILITIES

THIS IS OUR MOST VERSATILE RANGE, THE RANGE OF EXPRESSION AND IMAGINATION FOR ARCHITECTS, WHERE THE DESIGN AND CREATIVITY POSSIBILITIES ARE ENDLESS, THE CREATION OF UNIQUE, CUSTOMIZED FACADES BEING UNLIMITED IN DESIGN, TEXTURE AND COLOUR.

Our Engineering Department, supported by the necessary technology, works to obtain the products that best suit the artistic proposals of our clients. Active Artistic Creation.



ULMA Architectural Solutions has been responsible for the manufacture and installation of the west facade of the building, where the challenge was to visualize, based on the location of the observer, the eyes or the smile of Carmen Miranda.



TEXTURE AIR

Rio de Janeiro, Brasil.

Application Culture and Leisure.

Colour 6 different colours creating a spectacular mosaic with a kinetic effect displaying the eyes or smile of the artist Carmen Miranda.

Format 100.000 150x150mm panels.

MUSEUM OF IMAGE AND SOUND (MIS) PROJECT

PROJECT DESIGNERS: DILLER SCOFIDIO + RENFO (NY) & INDIO DACOSTA AUDT

Project signed by the award-winning interdisciplinary New York design studio **Diller Scofidio + Renfro**, by the architects **Elizabeth Diller and Ricardo Scofidio** & developed and implemented by the Rio de Janeiro studio - **Indio da Costa AUDT**.

The method of installation consisted of fitting the panels in a triangular shape and making images with 150x150-mm panels, creating a set of pixels in different shades of grey to achieve the desired effect.

The hardest part of the panel installation was to achieve the perfect combination of colours, as there were around 100,000 150x150-mm panels, 6 different colours and they had to define and simulate two images.



“We did not find one single pixel/panel out of place, and not only that, we were pleasantly surprised with the final result of the work, as it has exceeded all our expectations”.

Chris Andreacola Project Leader at the NY Studio Diller Scofidio+ Renfro.



TEXTURE VINE LEAF**OLÈRDOLA** Catalunya, Spain.**Application** Education **Colour** Special Green **Formats** 1200x400 mm.

OLÈRDOLA PROJECT

PROJECT DESIGNER: GUSTAU GILI GOLFETTI

Educational institution located in the Alt Penedès region, Barcelona, surrounded by vineyards.

The ULMA Architectural Solutions project team in collaboration with the architect, Gustau Gili, developed a panel with customized colour and texture.

COLOUR

To obtain the colour resembling the appearance of the vineyard, vine leaves were collected from the fields and sent to the factory to achieve the exact shade.

DESIGN

As for the design of the texture, this was based on a sketch made by the architect, and was given relief and depth to achieve the desired texture.



“The willingness to customize, the technical assistance and the collaboration with the ULMA team in the project were essential in developing the final product”.

Gustau Gili Galfetti, ARCHITECT.





CA L'ANITA PROJECT

PROJECT DESIGNERS: EXE ARQUITECTURA



For the cladding of the building, **polymer concrete panels** were chosen, achieving a very special and **customized** finish. We wished to pay tribute to **Anna Marés**, the former owner, and therefore installed perforated panels which, by the combination of holes, form geometric figures with the same pattern as the original mosaic that covered the floor. In the installation, great care has been taken to place each piece correctly to allow the final pattern to be viewed properly.

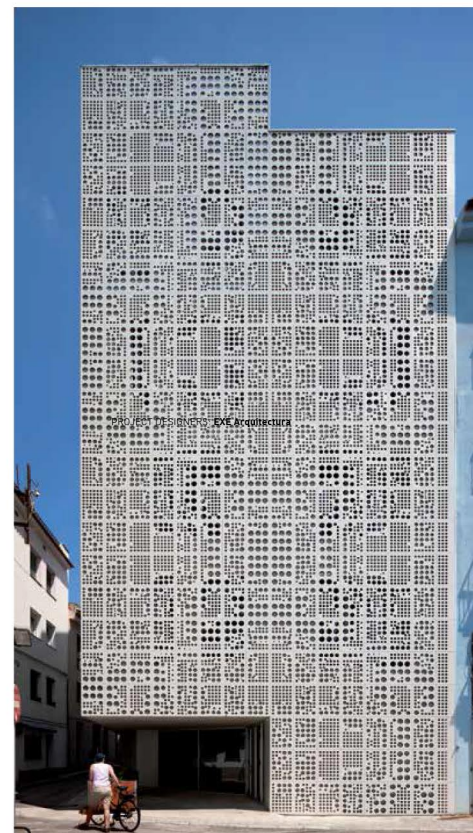
24 different panels were designed to make the mosaic.

The project has applied the latest innovations in building systems, which seek more sustainable and environmentally friendly models. Work has been done in accordance with the standards of the **LEED Certification**.

TEXTURE PERFORATED

ROSES, Catalunya, Spain.

Application Culture and Leisure Colour M08 Formats 600x900 mm, 1500x900 mm.



TEXTURE HEXAPENT
TORRESANA. Catalunya, Spain.
Application Education.
Colour Specials.
Formats Hexapent.

AZAL PROJECT

PROJECT DESIGNERS: TERESA BATLLE & FELIPE PICH AGUILERA

The possibility of applying a first phase of the research in a nursery led to the development of a wall system in which a detailed **analysis of natural skins** was made, seeking the ideal shape, size and texture, to create an enclosure to fit the space, creating structural elements with **organic forms of a continuous nature**.

The result was a **hexagonal panel, combined with the texture of an inner pentagon in bas relief**, whose **placement allows many and varied composition and design possibilities**. The play of light on the piece achieves a surface that changes throughout the day. The colours chosen for the facade piece, and its final placement, allowed the nursery to look like a mass of vegetation rather than a building.

“The knowledge and in-depth study of a product, of its manufacturing processes and of its possibilities of creating systems and, more than this, the involvement and attention of the professional in the concerns of the project in its broadest sense (aesthetic, utilitarian, behavioural), have enabled us to create complicity that has gone beyond the specific solutions for a particular building”.

Says TERESA BATLLE, project designer along with FELIPE PICH AGUILERA.



ESSENTIAL COMPOSITIONS PROJECT

PROJECT DESIGNER: ISABEL GOMIS

The spectacular metamorphosis of the installations' image is based on a design created exclusively for the project in question.

Essential Compositions is one of the benchmark companies within the fragrances sector. Research and innovation are the two main pillars of the company. The whole design project contributes added value as it gives a contemporary and modern vision of the company. In the façade, ULMA has chosen a ventilated facade made of polymer concrete that creates volumes designed exclusively for this project. The purpose of this design was to transmit the essence of the firm based on the values of modernity and innovation.

For this reason, ULMA used the WATER texture with perforations from its CREATIVE range and the colour white M24.



“ULMA manufactured many polymer concrete panels of many different sizes and formats specifically for this project.”



TEXTURE PERFORATED
GANDÍA Valencia, Spain.
Application Office & Industrial Building **Color** White M24.
Format Multiple ad hoc formats for the project.

TEXTURE CREAKTIVE FRETWORK**SAN SEBASTIAN** Gipuzkoa, Spain.**Application** Residential **Colour** Specially designed for the project **Format** 1800x500 mm.

GRAN VÍA PROJECT

Energy efficient renovation of a classic building maintaining its appearance.PROJECT DESIGNER: **ARCAYA ARCHITECTS**

The architect was looking for a modern solution, incorporating high quality insulation on the outside, whilst maintaining the appearance of the front of the building. With ULMA Ventilated Facade they achieved the desired finish concealing the joints.

3 key points to highlight**1. Eliminating vertical joints**

Our material allowed a format with larger dimensions than the space between windows (1800 wide), to cover the maximum distance and better conceal the vertical joint. This therefore achieves a predominance of horizontal lines and the aesthetic result is more appealing.

2. Eliminating horizontal joints with the fretwork

A special fretwork panel was created with the fretwork laid at specifically 11mm to ensure it was the same size as the horizontal joint. Thus concealing the horizontal joints.

A specific fretwork height was achieved to ensure the panel height covered the space between forgings so there were no visual breaks.

3. Special colour

The architect requested a special colour according to the NCS chart to contrast with the exposed concrete facade and its borders.

“It may seem like you have to reject the latest technical systems such as ventilated facades when renovating classic areas, but that is not the case, as this building proves”.

Álvaro Arcaya, ARCAYA ARCHITECTS.

BEFORE**AFTER**

TEXTURE CREAKTIVE PAPER and PERFORATED
SAN SEBASTIAN Gipuzkoa, Basque Country.
Application Industrial & Office Buildings
Colour P16 and M03 **Formato** 1800x500 mm.



ULMA ARCHITECTURAL SOLUTIONS PROJECT

THE NEW SKIN OF ULMA ARCHITECTURAL SOLUTIONS

PROJECT DESIGNER: MIKEL GARBIZU FROM ESTUDIO GLM PROYECTOS

It has been 15 years since the opening in 2001 of the ULMA AS Headquarters. Among the milestones planned to mark the **25th anniversary** of the cooperative (1990-2015), it was decided to tackle the project of the facade renovation. A multidisciplinary team was created which worked on maintaining the essence of the project while adapting to new architectural trends and new developments in the line of ventilated facades.

ORIGINAL BUILDING

It was a contemporary and modern design where the "horizontality" of the building and the curtain wall had been the protagonists of an innovative building for its day.

NEW PROPOSAL INSPIRED BY ORGANIC TEXTURES

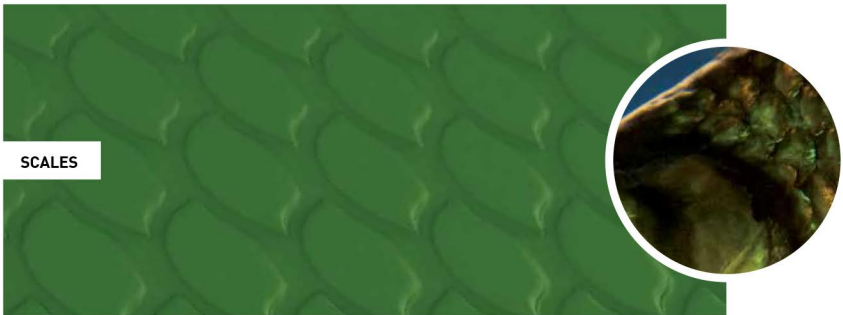
What was being aimed for with this update. The first intention was to convey with this new facade a **more organic feel through the textures, shapes and chosen colour**, both bringing it up to date with the present architectural moment and the possibilities offered by our polymer concrete. **Over the years we have been developing and improving our material and we have tried to emphasize the customization possibilities we offer.** Likewise, since it is a renovation, it was important to show the versatility provided both by the construction system and by the material for the re-composition of existing gaps, since one of the clearest premises was the need to maintain the original support structure.

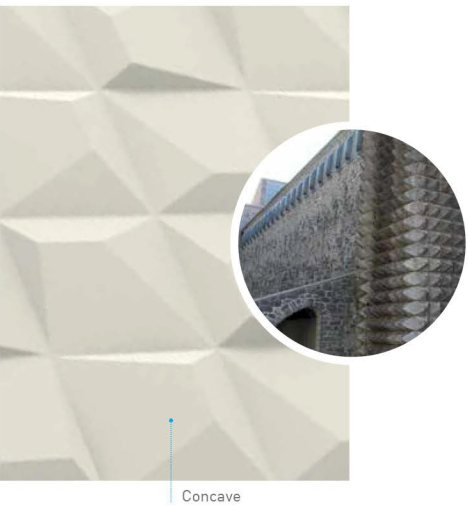
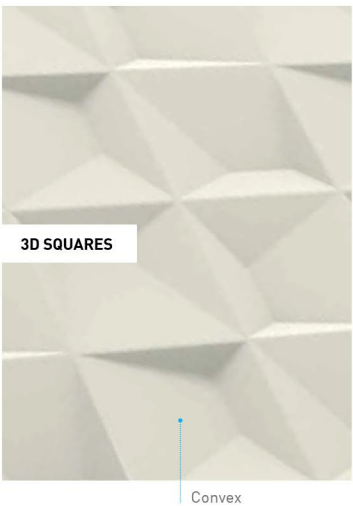
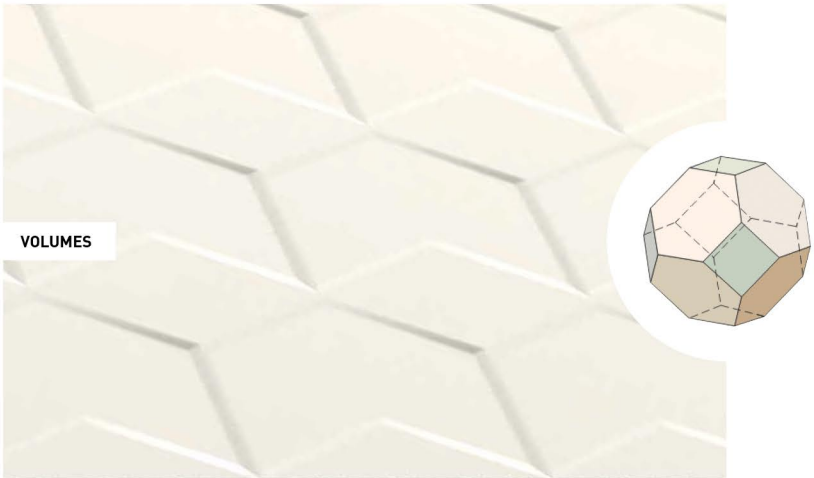
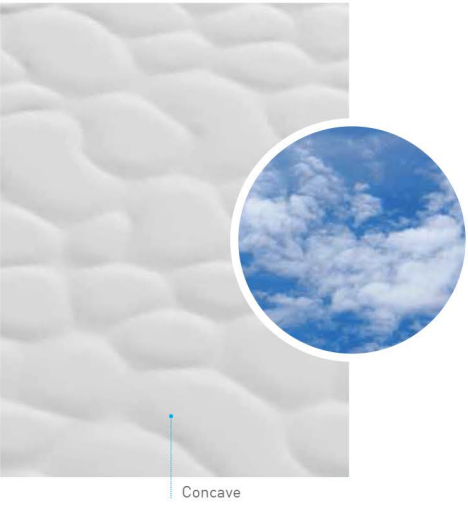
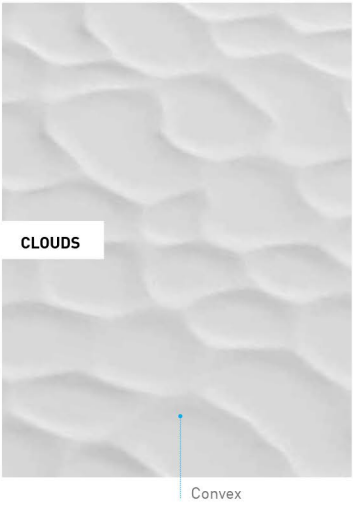


Another notable aspect of the new development has been the placement of a **double skin on the curtain wall to protect this southwest facing area of the building from solar radiation.** A lattice has been placed which becomes the **creative element and protagonist of the entire facade**, helping to filter the light as well as providing a very innovative style to the facade.

The textures chosen were **"paper" in a light colour that simulates organic cotton** and **"sandpaper" texture [black coal] for the main zone.** The lattice has a design in line with the texture of paper; a bamboo plantation which is enhanced with night lighting.







04

GENERAL INFORMATION

Services
Certifications
Sustainable commitment - LEED
Integrated development of the facade
Facade maintenance

SERVICES



WE ADAPT TO THE NEEDS OF EACH PROJECT AND OFFER DIFFERENT SERVICE OPTIONS.

CERTIFICATIONS

CERTIFICATION LEED

When applying the **LEED® v3** Certification, ULMA's Facade System can contribute towards up to **32 points**, depending on the characteristics of the project.



Supply and Installation. We supply the necessary materials (panels, profiles, rails ...) and take care of the installation, so that the whole process is in our hands.

Technical Consulting. We provide technical advisory service to assist more complex or unique elements of the facade.

Panels supply only. We can just supply the panels for the project, if you already have a trusted installation team.

Panel cutting as needed. We offer the flexibility to cut the panels to the exact size of the project requirements.

Complete facade solutions. We study the solution of all items in the facade: (Covers, surrounds, lintels, corners, ceilings)

WARRANTY, RELIABILITY AND QUALITY

We offer a 10 years guarantee of our products. Our commitment to quality and our philosophy of continuous improvement leads us to make tests on our panels with the following results:



10
YEARS
Warranty

ULMA'S POLYMER CONCRETE PROPERTIES

Standard	Test	Value
DENSITY		
EN 14617-1:2005	Agglomerated stone - Test methods Part 1: Determination of apparent density and water absorption	≈ 2300 ±150 Kg/m³
WATER ABSORPTION		
EN 14617-1:2005	Agglomerated stone - Test methods Part 1: Determination of apparent density and water absorption	<0-0.3%
FLEXURAL STRENGTH		
EN 14617-2:2008	Agglomerated stone - Test methods Part 2: Determination of flexural strength (bending)	>18 MPA
FREEZE AND THAW RESISTANCE		
EN 14617-5:2012	Agglomerated stone - Test methods Part 5: Determination of freeze and thaw resistance	>75 %
THERMAL SHOCK RESISTANCE		
EN 14617-6:2012	Agglomerated stone - Test methods Part 6: Determination of thermal shock resistance	>75 %
RESISTANCE TO FIXING		
EN 14617-8:2009	Agglomerated stone - Test methods Part 8: Determination of resistance to fixing (dowel hole)	>1600 N
LINEAR THERMAL EXPANSION		
EN 14617-11:2006	Agglomerated stone - Test methods Part 11: Determination of linear thermal expansion coefficient	23.5 10⁻⁴ °C⁻¹
THERMAL CONDUCTIVITY		
EN-12667	Thermal performance of building materials and products. Determination of thermal resistance by means of guarded hot plate and heat flow meter methods. Products of high and medium thermal resistance.	0.757 W/m.K
THERMAL RESISTANCE		
EN-12667	Thermal performance of building materials and products. Determination of thermal resistance by means of guarded hot plate and heat flow meter methods. Products of high and medium thermal resistance.	0.025 m² K/W
SPECIFIC HEAT		
-	-	830 J/kg.K
WATER VAPOUR PERMEABILITY		
EN ISO-12572	Hygrothermal performance of building materials and products. Determination of water vapour transmission properties. (ISO 12572:2001)	5- 1.31 10⁻⁴ g. m/ (MN.s)
WATER VAPOUR RESISTIVITY		
EN ISO-12572	Hygrothermal performance of building materials and products. Determination of water vapour transmission properties. (ISO 12572:2001)	Z ≥ 111 MN. s/g
WATER VAPOUR RESISTIVITY FACTOR		
EN ISO-12572	Hygrothermal performance of building materials and products. Determination of water vapour transmission properties. (ISO 12572:2001)	μ ≥ 5.340
REACTION TO FIRE		
EN 13823	Reaction to fire tests for building products Building products excluding floorings exposed to the thermal attack by a single burning item	B-s2, d0
EN ISO 11925-2	Reaction to fire tests - Ignitability of products subjected to direct impingement of flame Part 2: Single-flame source test (ISO 11925-2:2010)	
EN 13501-1	Fire classification of construction products and building elements Part 1: Classification using data from reaction to fire tests	

TESTED BY:



INTEGRATED DEVELOPMENT OF THE FACADE

ULMA ARCHITECTURAL SOLUTIONS PROVIDES A WELL THOUGHT OUT SOLUTION TO ALL THE NEEDS RAISED BY AN INTEGRATED FACADE. BESIDES THE PLACEMENT OF COATINGS OF THE FACADE PANELS, WE PROVIDE SOLUTIONS FOR:

WINDOW SURROUND



CEILING



ARCHITECTURAL ROOFS



CORNERS



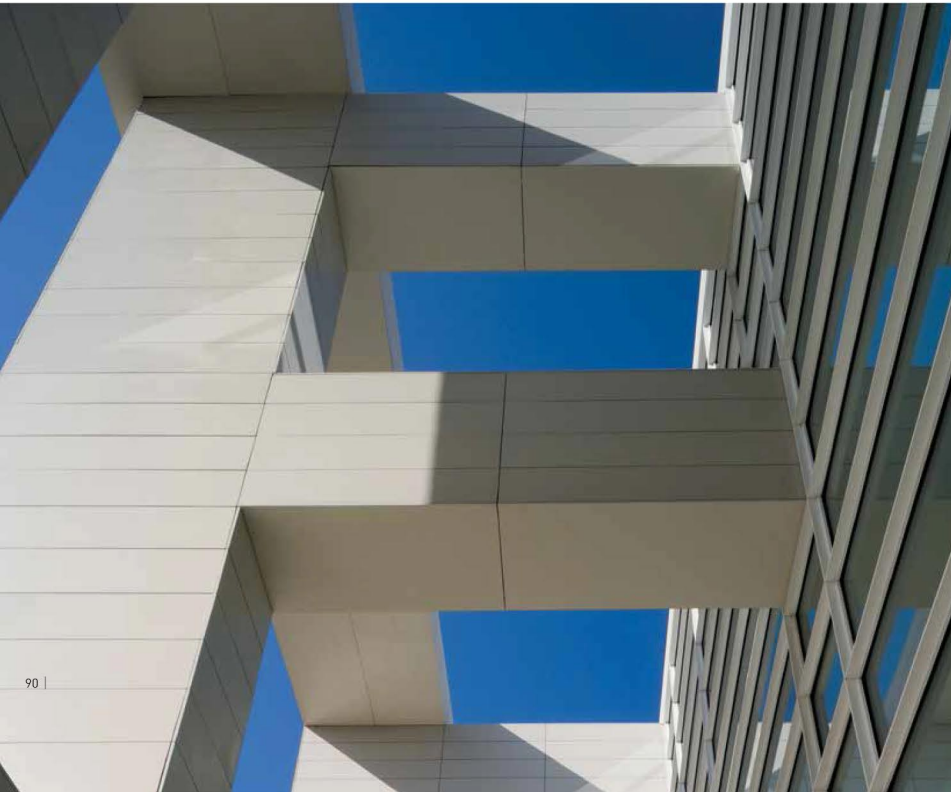
FACADE MAINTENANCE

The absence of porosity, both of the polymer concrete and of the **Gel-Coat** surface layer, means that the maintenance of the ULMA facade is limited to **periodic cleaning with soap and water**.

In order to conserve your **ULMA facade** over time in the same condition as on the first day, you should follow some minimum maintenance procedures.

WE RECOMMEND CLEANING THE PANELS IMMEDIATELY AFTER INSTALLATION.

We have a complete document on facade maintenance available on our website.





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ULMA ARCHITECTURAL SOLUTIONS



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