



CAMELEON Arhitect

Formboard top pine and CELLON-
the Innovative Facade Systems

Iftode Universal
sisteme de construcții

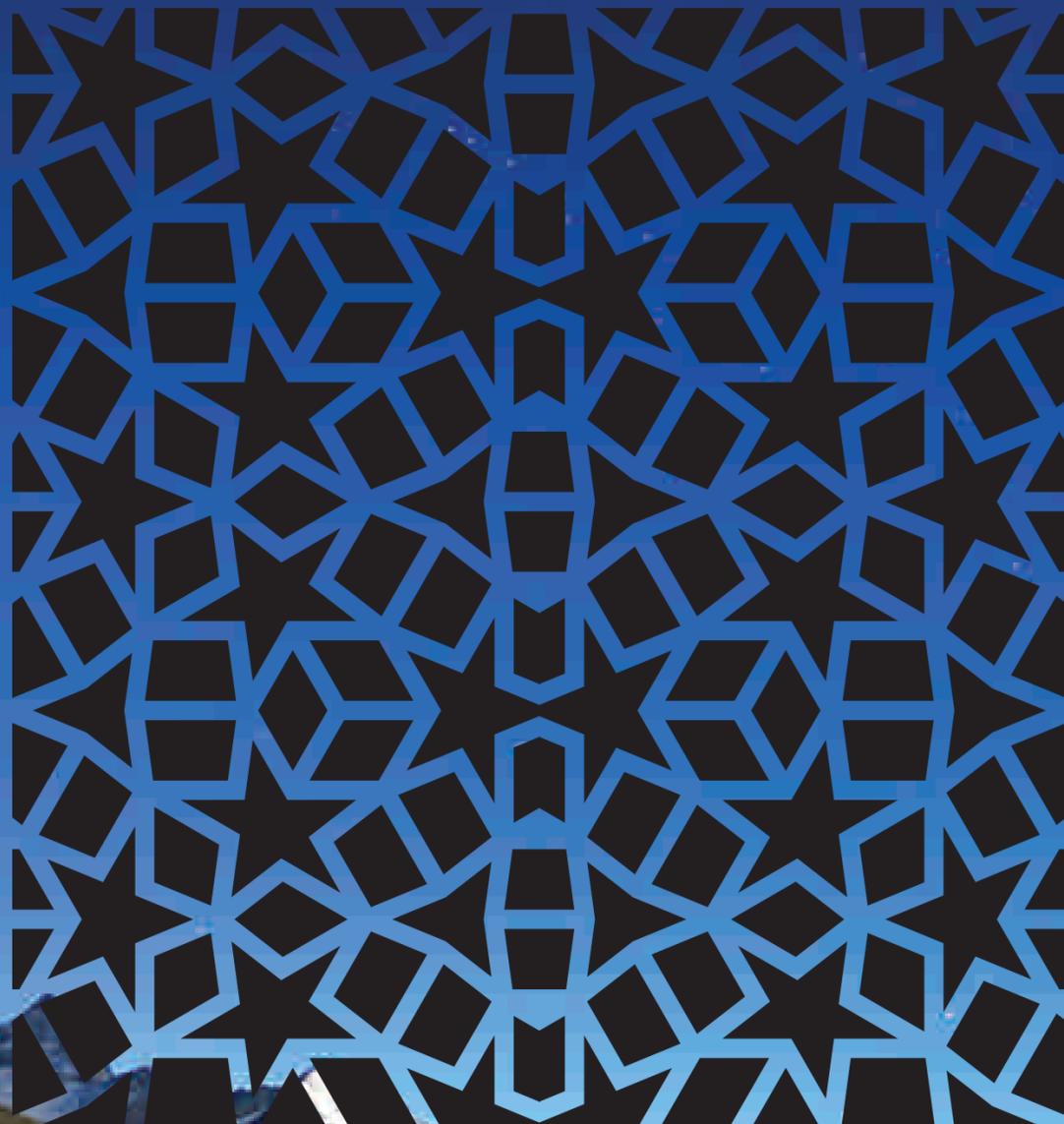


Table of Contents

1 Formboard top pine and CELLON Facade Systems	2
1.1 Definition	2
1.2 Applications	2
1.3 Properties	3
2 Installation Instruction	4
3 Reference Objects	8

Formboard top pine and CELLON Facade Systems

Definition

The Formboard top pine and the CELLON facade systems are back-ventilated facade systems. While the Formboard top pine is based on a wooden board with polyurethane bonding, the carrier board of the CELLON is a compact high-pressure laminate board (HPL), based on 70% paper layers and 30% phenol resin. These highly compressed wood-based boards are cut using laser technology and are then coated with diffusible wood-stain finishes in an industrial application process before they are delivered including perforations, drill holes

needed for the installation and the support system with fixings. Designs using these boards are subject to timber construction regulations and also local building byelaws. The design of the wood protection details has a significant effect on the durability of the boards and the required maintenance intervals. It is therefore important to take account of local weather conditions such as exposure to hail and snow (e.g. overlap detail, protection against splashback). The top edge of the board must be protected against load impact.

Applications

The two carrier boards can be applied in many different areas. External applications include usual back ventilated facades, perforated or plain balcony balustrades, stair railings, partition walls, sliding screens or even acoustics solutions for balconies.

Back Ventilated Facades

The main application of Formboard top pine and CELLON panels is the back ventilated facade. It is usable for both wood as well as solid constructions. The variable carrier boards allow customized facades in both formats and colours. Additionally, plain panels can be even mixed with perforated elements in between.



Balcony Balustrades

The perforated panels can not only be used as facade element, but also as balcony balustrade, giving every single house an individual touch.



Sliding Screens

Individually designed sliding screens are possible through the free choice of patterns and colours. Creating unique forms with light and shadow, the perforated boards ensure to create a special atmosphere inside and outside the building during the day as well as nightly.



Stair Railings

Stair railings for interior and exterior application that perfectly fit to the architecture of the rest of the building and even contain individual patterns are a child's play with Bruag products. Very filigree perforations without losing too much stability are especially possible with CELLON.

Shadowing Elements

The unique game with light and shadow of the perforated panels create a special ambience in every room. It is not only suitable for modern rooms, but also integratable in historical buildings. Even filigree and complicated patterns are not an issue.



Properties

Facade Systems	Formboard top pine	CELLON
Carrier Board	Wood-based board with polyurethane bonding	Compact high-pressure laminate board (HPL), based on 70% paper layers and 30% phenol resin.
Board Thickness	10 or 18mm	8mm (but can be varied)
Maximum Size of Untrimmed Board	18x6200x2100mm 10x6100x2100mm	8x3660x1860mm or 8x3050x1300mm
Maximum Size for Industrial Coating	6180 x 1300mm (18mm); 3300 x 1300mm (10mm), Length > 3300mm if agreed	3660x1300mm
Cut	Laser	
Paint Coat Options	NCS, RAL or 14 possible Bruag ALU Colours	
Building Material Class	B2= Standard, B1=with fire-retardant coating (surcharge)	B2= Standard, B1=with fire-retardant coating (surcharge) V0 American Standard (fire retardant) = possible with CELLON FR
Fasteners	HolzFix stainless steel screws + sealing ring (Holes and recesses cut by laser without surcharge)	
Support System with Back Ventilation	vertical softwood batten (spruce) min. 27 x 80 mm	
Price Calculation	Net Calculation	Gross Calculation
Production Time	About 2-3 weeks (without delivery)	
Strengths	<ul style="list-style-type: none"> Totally individual forms (incl. perforations and ornaments) possible Very ecological Very good value for money Moisture resistant Surface does not disintegrate The boards are highly resistant to mechanical impact (e.g. hail stones) due to their highly condensed surface Large formats possible without surcharge Big choice of colours Easy to install and dismantle with stainless steel screws 	<ul style="list-style-type: none"> Totally individual forms (incl. perforations and ornaments) possible Highly weather resistant Highly resistant to mechanical impact Scratch-, impact- and shockresistant Mechanical robustness No swelling up from moisturing Frost-resistant Big choice of colours Natural appearance Easy to install and dismantle with stainless steel screws

Installation Instruction

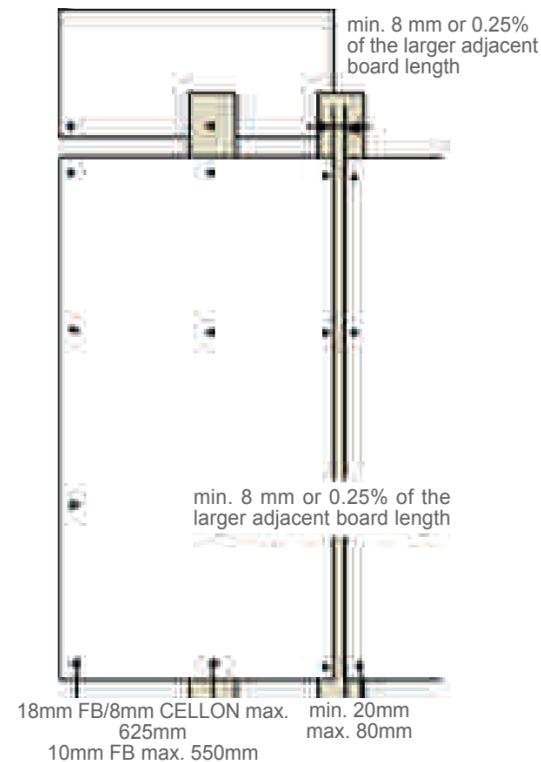
Installation details should be designed for each respective project, taking into account the conditions included in the General Building Control Approval. The explanations below are only intended as a preliminary guide to detailed design.

The support system should consist of vertical battens (min. 27 x 80 mm). This should be covered with a 1 mm thick sealing tape. The horizontal joints between boards must not be covered up or blocked by sarking membranes or horizontal battens. In order to obtain sufficient accuracy of the dimensions when cladding buildings in solid construction, the facade should be measured from the support system.

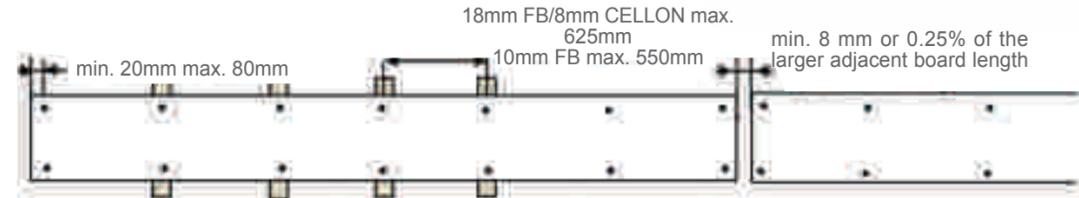
Use surface-mounted HolzFix stainless steel screws (torque 4 Nm) for fixing. The maximum spacing of screws for boards of 18 mm thickness must not exceed 625 mm and for boards of 10 mm thickness, must not exceed 550 mm, with a minimum distance from the edge of 20 mm. The minimum joint width between two facade elements is 8 mm or 0.25% of the larger adjacent board length. The joint width for large-format boards should be increased.

Please take note of the adhesive label showing the board's designation. On vertically mounted boards the label is always attached near the lower edge of the board, and on horizontally mounted boards always on the left edge. In order to avoid stripe effects from the light reflection on Bruag Alu coatings the boards have to be aligned evenly. This means that vertically aligned boards have to be fitted such that the label is near the lower edge, and horizontally aligned boards have to be fitted such that the label is on the left. The reason for this type of stripe effect is a difference in light reflection which is caused by the orientation of the ALU Flock particles in the coating.

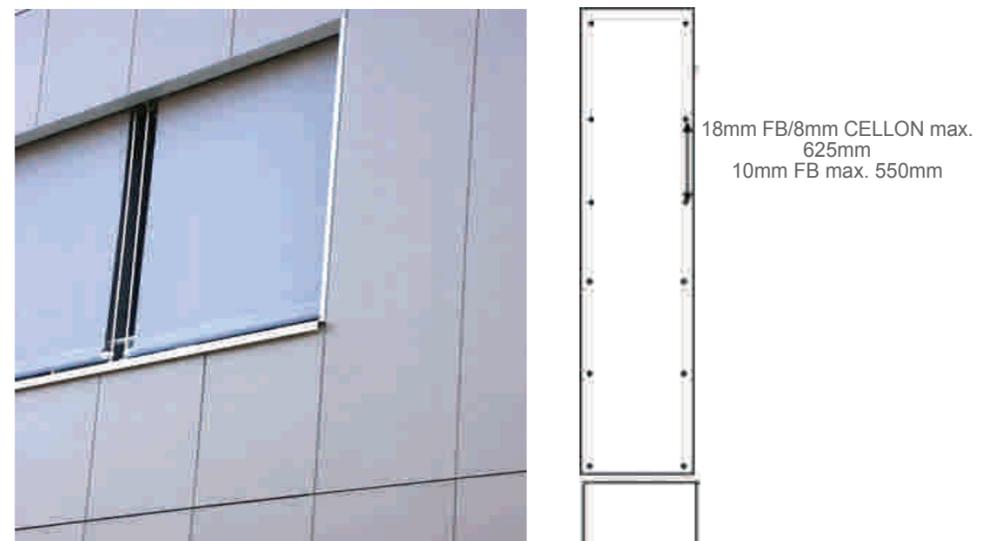
Example of screw pattern for storey-high facade elements



Example of screw pattern for narrow horizontal facade elements

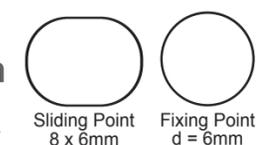


Example of screw pattern for narrow vertical facade elements



Example of fixed and sliding points for 10 mm-thick boards longer than 3600 mm

Recesses required for installation can be factory cut without additional costs. However, this must be included with the order information.



Detail of window sill joint



Example of corner joint

The boards should be installed so that the corners meet at right angles. If possible, the outward facing edge should face away from the weather.



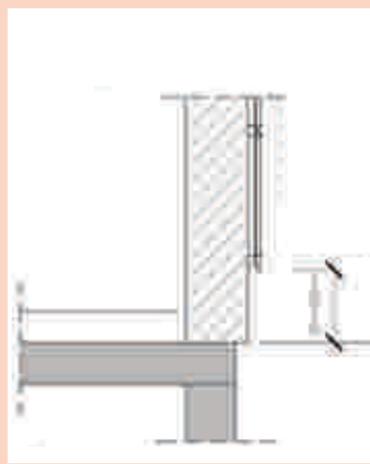
Example of corner joint with corner profile

Alternatively, it is possible to use hard PVC corner profiles in the same colour as the facade, where the mechanical load on the corner fixings is small. For corner fixings with higher loads, metal corner profiles are recommended.



Example of splashback detail for Formboard top pine Facade

At the base of the facade a splashback area of approx. 30 to 40 cm must be allowed for. This area should be designed to allow easy replacement or as an element in a solid material, as the carrier board is made from a wood-based material (spruce). Z-profile metal strips should not be used as these could lead to increased exposure to moisture due to splashback.



The System with the Unlimited Possibilities

Whether elegant or ingenious facade constructions, the variable systems of Bruag can be adapted to your specific requirements and ideas. This is the reason why the system suits for both private homes as well as industrial or commercial buildings.

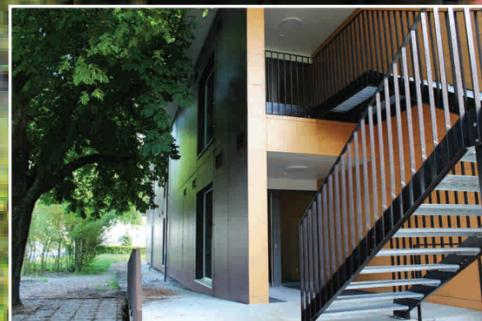


Reference Objects

CELLON: IMMORTAL

The new CELLON facade system keeps what it promises. In a colour and form variety to the joy of every designer. With a resistance that would even impress every sceptic. The compact high-pressure laminate board based on cellulose and phenol resin passes every endurance test. 8 millimeters defy all weather challenges. And nearly every perforation you can imagine is possible.

With CELLON, Bruag distinguishes itself in so far from the conventional, traditional HPL-panels, as it enables on the one hand total freedom in colour (over 3000 shades possible) and form, but on the other hand also trough the natural appearance of the panels. In contrast to the usual HPL boards, the coating of Bruag is applied directly on the resin on top instead of under the final resin layer, avoiding the quite sterile surface that is normally seen. The chosen colour concept can thus be accentuated ideally.



CELLON. The Façade with the Plus.

Formboard top pine: (ECO)LOGICAL

The Formboard top pine facade panels do not only fulfill today's demands on design and quality but also correspond to the ecological standards of tomorrow.

Regarding those advantages, it was not surprising that the architects of Visiobau chose Formboard top pine for the facade and balcony balustrade of the first Minergie-A-Eco building in the canton St. Gallen. Minergie is the Swiss quality label for new and refurbished energy-efficient buildings. Forms, colours and an optimal transparency were additional keywords for using the perforated balcony railings of Bruag. The result is marvellous.

**Ecological Facades Have a Name:
Formboard top pine.**



Colour Your Life

Colours can activate different feelings in humans. Thus, there is a big potential lying in colours. While conventional facade elements are only available in a few colours, the systems by Bruag can be coated in over 3000 different colour shades (NCS, RAL or Bruag Alu). Like this, creative, colourful facades can be easily realized without surcharge.

The architects of the tennis stadium in Doha, where tournaments on highest level are held, were impressed by the variety of colours available and chose even three different shades for the facade.

Game, Set and Match for the Bruag Facade System.



**CAMELEON
Arhitect**



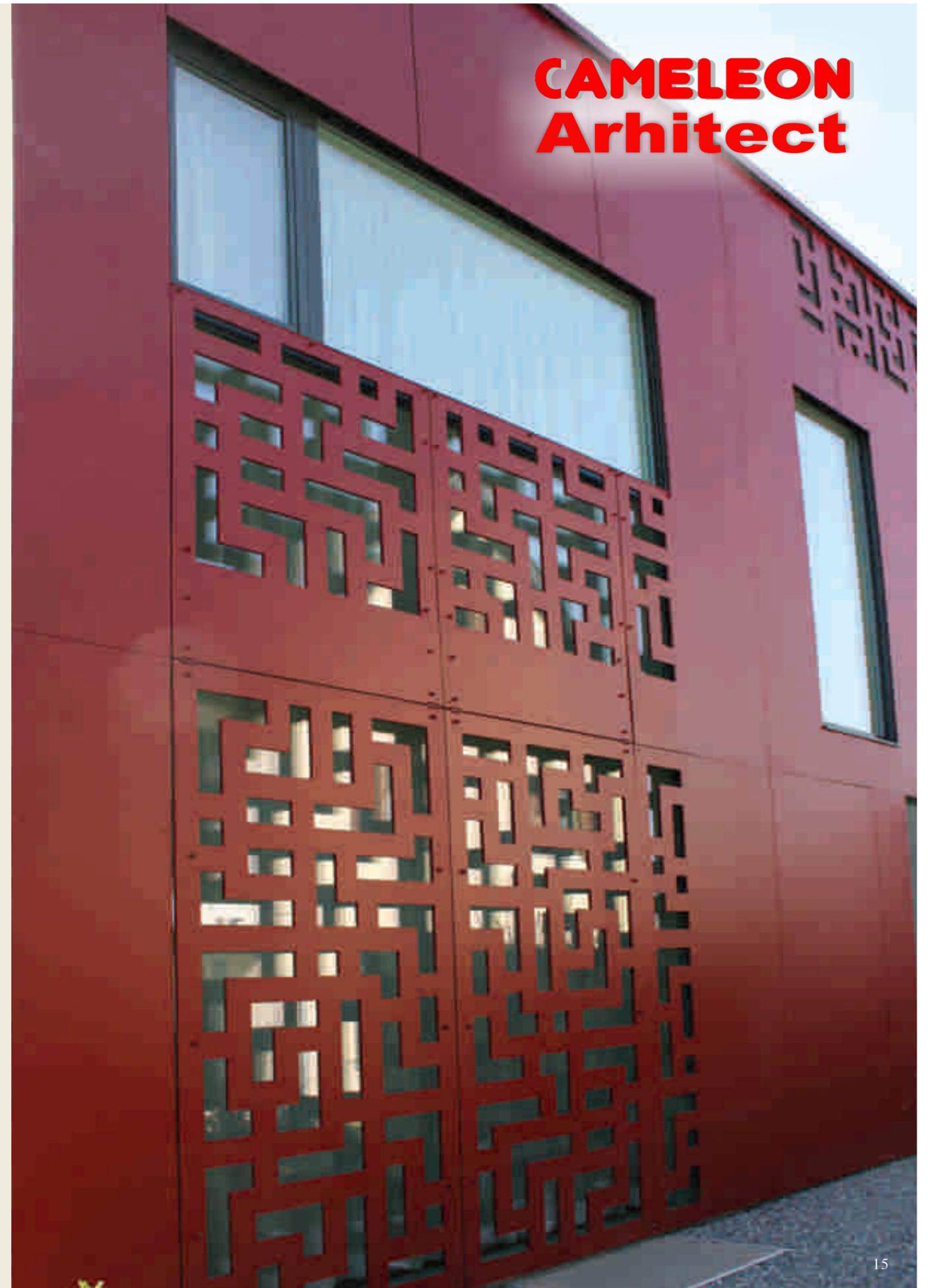


Versatility Through Perforated Facade Elements

Bruag does not only offer plain facade panels, but enables also having variety using perforated elements. Thanks to the huge number of perforations available and the possibility to even design an individual pattern, every building can easily get unique.

The architect of the single family house used the broad variety of Bruag panels. Not only the facade itself, but also the balcony cladding and the big folding shutters are out of Bruag's hands. Additionally, the chosen pattern is repeated in the interior design as well. The result: A through and through harmonious building.

Unique Buildings Easily Feasible.



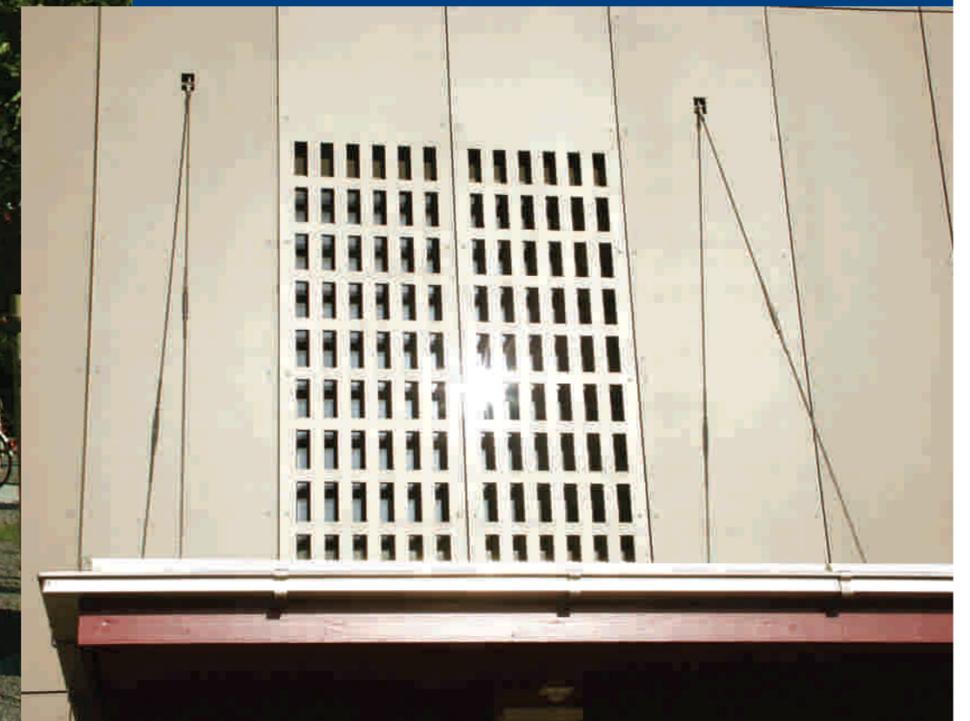
CAMELEON Architect



Perforations Appropriately and Stylishly Integrated

With the individual perforations it is possible to design facades with an artistic and individual feel. The light coming through the perforations creates a special living atmosphere with elegance and comfort. Depending on the position of the sun, light patterns migrate across the floor and the interior while at the same time providing maximum screening. The flexible laser cutting technology allows for any imaginable geometry, size and shape; this means that natural shapes such as leaves or others can also be incorporated in this play of light and shadow.

Perforated facade elements mixed with plain ones were used for two different purposes in the 5-family-house. On the one side, the perforation used in the area of the stairwell enables light coming in from outside. On the other side, the facade gets an interesting change with some perforated panels in between.



Astonishing Design Options.

How a Balcony Balustrade Becomes the Identification Mark of a Building



The various applications of the perforated panels are nearly limitless. Also balcony balustrades of Bruag make a good impression.

Free choice of patterns and colours as well as an optimal transparency were keywords of a family deciding to use perforated Bruag panels on the balcony. The result is breath-taking. The railing prevents glances from outside and additionally creates an interesting game with light and shadow for the inhabitants. The balcony balustrade is installed with an easy fixing system out of stainless steel profiles and as filigree as the perforation itself.



Functional Aesthetics.



Integrated Visual Identity

Thanks to the big variety in use of the Bruag facade panels, not only the conventional panels can be adapted to the wishes of the customer, but also letterings and other customer-specific panels can be made out of one hand.

The broad possibilities of Bruag panels were used in the building of a new leisure facility. The facade elements as well as the visible underside and the circles in front of the windows are made out of the material Formboard top pine. And even the several meters high lettering was produced out of the same material. Different colours and shapes perfectly in tune with each other create a harmonious complex.

Until the Dot of the i. Bruag.



A photograph of a modern building facade. The building features large, bright red panels that form a prominent frame around a glass entrance. The rest of the building is finished with grey panels. There are several windows on the upper floor. In the foreground, there are some green plants and a metal railing.

**CAMELEON
Arhitect**

Large-Format Facade Panels as Eye Catcher

Both CELLON and Formboard top pine facade panels are also available in large formats. This does not only make buildings seem bigger, but also gives designers and architects a big freedom.

The flexible, large formats of the panels as well as the freedom in colour convinced the architect of the new building for the furniture store 'diga'. The colour seems inviting and fits perfectly with the aesthetical workings of the company. The large panels show the generosity of the whole showroom.

Creativity Has No Limit.

**CAMELEON
Arhitect**



Storage Area, Colourful Accent and Partition

Where to store sun-loungers in winter? Where to put garden furniture during a storm? These questions can be ignored with the storage rooms made by Bruag. Everything can be stored right on the balcony and does not need to be carried somewhere else.

The solution is easy and convenient: Popular storage areas can be produced in individual formats and colours with the Formboard top pine facade panels. Additionally, the storage room on a balcony is also an ideal partition between apartments.



Customized Solutions.

CAMELEON
Arhitect

Iftode Universal
sisteme de construcții

Iftode Universal SRL
Bdul. George Cosbuc Nr.156/350/416
Galati, Tel/Fax: 0236 310 555
www.universalconstruct.ro