LIGHT ARCHITECTURE

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A curvaceous colossus
A short distance from the velodrome used for the mythical Paris-Roubaix race, we arrive at a second covered velodrome, which hosts local clubs and high level competitions on a 250m wooden track. The building, which can accommodate up to 1,500 spectators, is a scaled version of the oval shape of the Siberian larch track, over 1,400 metres high. To lighten the construction, the ground floor is fully glazed, and constitutes the foundation of the ring formed by Danpalon® supported by a metal framework. “This makes it possible to lift the translucent ring off the floor to give the impression that it is floating in the air, bringing light and airiness to the complex,” explains Thomas Houot, Architect from the ANAA agency.

Apart from the rounded shape and the considerable height (11m) that it allows, Danpalon® has also been selected for its thermal and lighting properties, essential in this HQE project. “We had to limit energy consumption and we have sought to make maximum use of natural lighting. The light we get through the structure is gentle and of excellent quality,” explains Thomas Houot.

“Furthermore, at night, we wanted the activity inside to be visible from the outside. In addition to specific lighting for the track, we placed polycarbonate tubes with fluorescent light sources on top of the walking frames and terraces. At night the structure becomes transparent and the building looks like a lantern.”
Combining gabions and Danpalon® on the outside, the Grange au Bois gymnasium has an outstanding architecture at the entrance of the Metz town. Stones encased in metal racks form a shell, designed by the Project Manager to withstand the risks of deterioration. “It is also an environmental approach that promotes the local natural product - the Jaumont stone,” adds Jean-Marie Gremillet, the Project Architect.

Above this protective base, stands a translucent facade, which provides the required illumination to the sports hall. On the south side is a system made up of a Danpalon® layer and a Controlite® layer separated by an air gap of 70 cm. “We could have opted for a double skin with integrated blinds in the cavity. We preferred to choose Controlite® that brings a lot in terms of ease of use for a sports hall: automatic control, self-regulation every fifteen minutes, adjustment of the position of fins according to the sunlight, heating in winter,” explains Jean-Marie Gremillet.

A technical adaptation was required on this site: the motorisation of Controlite® shutters, usually on the top part, is moved here to the bottom of the facade for easy maintenance. The north side and the west gable are meanwhile treated with Danpalon® 16 mm Softlite, “to avoid the discomfort of late afternoon in summer,” says Jean-Marie Gremillet.
Placing with the material, the sun’s rays led the ArcQuo Architect’s Office to modify the development of the new building, welcoming the wholesale flower and house plant business of the Toulouse MiN (National Market). “We had planned a Chinese silhouette of the frame structure and cladding with lighting from inside, visible from the street through the Danpalon® facade”, says Jean-louis Jérémie, Architect from the Ar-Quo agency. “We noticed that during sunny days; numerous in Toulouse, light was diffracted through the Danpalon® cells creating a “mysterious” radiance that seemed to make up many heavenly and fleeting messages changing with time. This magical effect continues during the night thanks to the reflection of city lights. To achieve this, we preferred to modify the lighting, initially planned and enhance the black concrete foundation inlaid with Latin texts”. Part of the restructuring of MiN, this new building, located at the north entrance of Toulouse, acts as a model in a neighbourhood in search of an image. Jean-louis Jérémie explains: “we took advantage of a simple architectural style that relies on simplicity and on the contrast between the black, opaque and heavy concrete and the lightness, transparency and green colour of Danpalon®. A dialogue is created between these two materials”. Dedicated to the services of the city, an intercommunal technical centre combines a variety of activities, some noisy (workshops of different services, loading areas near the railway line of the Bourget yard) and some quiet (offices, archives, company store in residential area). For the Bourget airport Urban Community centre, the choice was to divide these activities into two parallel buildings, lengthwise. Between the two, an interior street, 8 metres wide, acts as a link between the two worlds. A part of the street is covered by Danpalon®, creating an inner courtyard that enables movement from one external space to the other without being exposed to harsh weather. For workshops and storage areas, in-depth illumination and good insulation were required (the whole is known as BBC), even if the heating requirements are less important than for offices. The facades blend wooden siding on the bottom part and, on the top, Danpalon® 16 mm clear of 4 m height. “Aesthetically, it works well with a contrast between smooth, bright and modern material, and the softer, matt and sober wood”, explains Jonathan Deschamps, Head Architect Project Manager of the Pierre Lombard Agency. “During the day, Danpalon® brings a quality of natural light inside the workshops. It takes another dimension in the evening, when the workshops are lit and make it visible from the outside. Its metallic side highlights woodwork and aluminium finish flaps, creating a material unit on the facades.”
It is due to a front extension and a complete restructuring of the building that the Daviel University Residence in Paris can now accommodate students in comfortable and spacious rooms replacing the somewhat old narrow ones.

For the facade, the change is total “to give a new positive image of the home and the neighbourhood,” says Jean-André Macchini, project architect. The 1,60 m extensions have earned valuable surface area without weighing down the structure by a lightweight system combining a timber frame and Danpalon® cladding. Three panel colours, clear, opal and ice, sometimes gives the perception of the colour of a steel tray in the background, developing into a set of bright and colourful surfaces. Jean-André Macchini says: “The entire building vibrates and responds to the slightest modulation of natural light during the day and night in the Paris sky, with random colour effects and reflections depending on the occupancy and lighting of the rooms. The perception of the building is very different depending on where it is viewed from: from a distance, white dominates, based on the Parisian landscape; from up close the iridescent colours vibrate the volume. This work on the material constituting the skin of the facade is a counterpoint to a set of recesses and projections, recess angles, shadow effects, and sculpturing by refining its size.”
This is a new neighbourhood springing up at the edge of Paris, in the Claude Bernard ZAC. A building of 90 rooms on one of the plots of 45 m by 32 m.

“The building is very thick and relatively tall. I wanted to carve, sculpt this solid block to appear to give it more lightness. Hence, on the facade interior angles are arranged irregularly where loggias come to rest,” explains Dietmar Feichtinger. Above the mineral basement of the ground floor in concrete and glass, the building is clad in a ventilated Danpalon® skin, “which provides softness, brightness and depth to this parallelepiped inscribed in a dense urban set up.” A play of colour is created with three levels of transparency: ice - almost opaque, opal - translucent and clear - transparent, over a white vapour barrier that makes the background uniform and comes out as a watermark. “By a random and unmeasured arrangement of panels, I tried to give a graphical rhythm and a balance that vibrate the facade.”

By this play of transparency, and the variety of reflections, the building changes appearance depending on the time and where it is viewed from. “From the street, we perceive effects of the sky, changing according to the time. From the buildings in front, we see the reflection of the surrounding buildings, some of which are very colourful. The perception between distant view and close view varies, giving multiple facets and a great richness to this building,” concludes Dietmar Feichtinger.
One place, one architect, one artist, one project: all these elements linked to the book were necessary for transforming the former police station of Forcalquier into a business hotel dedicated to the publishing trade. “It was a rather unusual building of the 60s, with garages on the ground floor and accommodation on the first floor. From the outset, we thought of removing all internal walls and changing them to a covered, open and unheated external passageway,” recounts Bernard Brot, Architect from the R+4 agency. Elevators, stairs, offices and common services all open onto this large corridor, which then becomes a place for movement and meetings.

It is by discovering the possibility of screen-printing Danpalon® that the Architect has opted for this material, which makes the passageway a thermal lobby sheltered from the wind. For the patterns, he called upon Marie Morel, an artist related to Forcalquier through his parents, editors settled in this Provençal town in the 70s. “The large canvases of Marie Morel are filled with details, materials and writings. After studying it many times and with the Artist’s consent, it was adapted to the scale of our project so that the drawings and writings were legible,” explains Bernard Brot. The first picture is screen-printed in orange, white and black on grey Danpalon® covering the passageway while a second picture is printed on the shutters, indicating that the place is a part of the writing trade.

On the edge between urbanity and nature, set up between a ZAC and a hiking trail along a river, the Epernon sports complex finds its personality in the search for harmony with its environment, without dissimulation or assimilation.

On the town side, it is the illuminated and the mineral concrete of the forecourt welcomes the visitors. On the river side, the printed Danpalon® facade integrates with the park, without touching it, providing the reflection of trees in the Drouette valley. “Initially, we had planned to screen-print this facade,” recalls Bernard Ritaly, Architect. “A visit to a trade show, during the design phase, allowed us to discover digital printing. This method enables us to create a facing with a more personal development, it opens up a field of possibilities that were not accessible earlier. With a little imagination and fantasy, this is the solution that we have retained; at less than two metres away, the printed photo cannot be distinguished; only pixels are visible. One needs to move back from the facade to be able to understand what it represents.” The trees printed on the Danpalon® double skin harmoniously mingle with the vertical wooden shingles, another key material of this complex. For Bernard Ritaly, “the facades are an allegory of the forest and of the plant world. We have used untreated larch, which will gradually become tinted and in a few years from now, the entire building will be naturally grey. The pattern will not move.”
imposing in size but well-integrated in its environment, the waste treatment centre in Newhaven is located on quite a difficult terrain, along the Ouse river, wedged between heterogeneous industrial buildings and residential areas, along a regional park.

The building is partially buried and emerges from the ground only 27 m high out of the 45 m required for the waste treatment process that is carried out over 200 m in length. All that can be seen has been softened, rounded, curved to visually blur the building and reduce the impact on the environment.

The building exterior is designed in three parts, which corresponds to different stages of the waste treatment. On one side, the waste is received under a steel cladding, whereas at the other end an apse in porous textile covers the cooling elements. Between the two, a huge Danpalon® hall covers the processing pit and the heart of the system. During the day, light enters and lights up the installations. At night, the continuous activity of the building is gently enhanced with minimal light pollution. In slightly cloudy weather, the milky appearance of the cladding allows it to almost merge with the sky, thus minimising the visual impact of the imposing building.

It was a difficult architectural choice to have made transparent what is usually opaque, and curve what is usually square. A choice that has had a positive effect as this treatment centre has not been subject to the usual controversies that these kind of projects are generally known to face.
Fitness, football, gymnastics, boxing as well as recreation, arts, theatre, meeting spaces: the Youth Centre of Blackburn (United Kingdom) hosts multiple activities in a renovated and large building. Located in a neighbourhood being redeveloped and in search of an identity, this massive building covered by more than 1,000 m² of bright orange Danpalon® acts as a strong model. “After consulting different samples, we selected this colour as we wanted to give the centre a unique signature, which enhances the “screen” effect of the facade. Furthermore, the depiction is close to a burnished metal, which enables it to seamlessly integrate with its environment,” says architect Mark Serventi. Made transparent by the interior lights, the centre becomes more emblematic at night. For Mark Serventi, “effects make it look like a block of carved amber”. Used as a model, this colour is also used on furniture and equipment as well as in the centre’s logo.

Although aesthetics are important, the technical qualities were also reflected in the choice of the material: “the acoustic properties are essential, particularly as Danpalon® is placed around a football field and outdoor playing areas that lie at the heart of the complex,” says the architect.

THE LITTLE ONES
IN THE NEST!

In downtown Aire-sur-la-Lys, a coocon for children has emerged as a nest to shelter them. A nursery school, childcare centre, a PMI space (Maternal and Child Care), and maternity services form a single building as seen from the outside, but which opens onto a courtyard inside to the south from where life emerges. “We started with the name of the town, Aire, “area” in Latin, which is the eagle’s nest, to imagine a protective place. The entire periphery is like an egg shell covered with copper, stainless steel and wood. At the centre is the hatching post, with plays of volumes of materials and colours,” says Grégoire Noyer, architect from the Parallèle agency. “We worked on a variety of lights and colours both outdoors and indoors, to help towards the development of the child. We wanted the facades to include elements of curiosity, diversity bringing together different materials,” specifies Grégoire Noyer.

Among the materials, Danpalon® can be applied in many forms. At the entrance of the early childhood centre, it is used as a facade facing on the bottom of the white vapour-barrier that brings out the colours, in a play of assorted shades matching the glazed copper that crowns the door. In the upper part of the kindergarten hall, it becomes a translucent curved envelope that protects the space and its occupants from direct sunlight during the day and plays the role of a reassuring lantern in the evening.
By remodelling the facade of the Daedong kindergarten at Busan (Korea), the goal was not only to give a new image to an austere building, but also to promote revival and change in the neighbourhood’s atmosphere.

The starting point is a dark building made of bricks, wood and painted cement with square shapes, which differs little from surrounding buildings. “I wanted to recreate the qualities of imagination and creativity that are found in children by tilting the new facing by 15 degrees with respect to the original facade, which was possible thanks to the lightness of Danpalon®, a material which also provides a more modern image than bricks” explains Seong Yeongui, Project Architect.

A lighting system embedded in the facade transforms it into an additional lighting point at night, which contributes to the urban landscape of a neighbourhood consisting of accommodation and shopping malls. “The buildings all around are dark and covered with advertising signs,” says the architect. “By becoming a bright spot in the urban night, the kindergarten takes on another architectural and cultural dimension. It stimulates the curiosity of residents and passers-by; it provides the values and philosophy of the activity taking place inside. The gamble seems to have succeeded as numerous people stop to observe, or even photograph this unique building because of its design and lighting.”

A MAGIC LANTERN ILLUMINATING THE NEIGHBOURHOOD

Busan (Korea)

LIKE A WAVE... OF RENOVATION

Busan (Korea)

Simplicity, clarity, modernity, 3 rediscovered qualities of the B’z motel, a hotel located in the central district of Busan (Korea). Externally, the thirty year-old building was indistinguishable from the surrounding commercial buildings: disparate architecture of bricks, glass and stones, dark colours and facades pervaded with markings and shop signs, illuminated at night by a jumble of artificial lights. The intervention of Architect Yoon Jaemin simplified everything and restored a strong personality to the building.

For the facade on the street, he relied on a Danpalon® wave including the old building. This curved facade creates depth thanks to the diversity of volumes as well as the transparency of the material, highlighted by the play of lights. Placed on the metal structure, LEDs change with time and improve the visibility of the hotel, a key aspect for customers in this neighbourhood with narrow alleys. The customers are received in a completely renovated lobby and enclosed by blue Danpalon® partitions, which are illuminated by LEDs, at different points of the facade.
TO AWAKEN

THE SENSES

Paris 15th and 19th (France)

The nursery is a place where children awaken their senses. It should be a pleasant and comfortable space, to arouse curiosity, sensitivity, pleasure,” says Architect Pablo Katz. For two Parisian nurseries, Les Petits Bonheurs (19th) and Le Temps de l’Enfance (15th), the architect opted for Danpalon® as the system for partitioning and facing the walls. “With these two nurseries being managed by the same association, we wanted to register a stylistic unit, with similarities but which respects the characteristics of each program. Technically, the material is a very durable product that softens bumps and impacts whilst adding glint and sheen. It also helps to unify the different facing locations,” says Pablo Katz.

Both these nurseries have been set up on the ground floor of a residential building. For the first, the constraints were strong: a low height from the ceiling, deep and poorly lit boards and utility shafts serving the eleven cumbersome upper floors. Danpalon®, warm orange, creates a fluidity of movement with curved partitions and contrasted curves. When it is placed as a facing of an opaque wall, it is illuminated by integrated LEDs.

Temps de l’Enfance enjoyed better lighting and easier prospects for improvement. The architect therefore played with straight, vertical and inclined green walls, which punctuate red areaways.

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Interior layout
Les Petits Bonheurs : Danpalon® 10, 600 mm, orange, 475 m²
Le Temps de l’Enfance : Danpalon® 10, 600 mm, green, 545 m²

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