

QUALITY COLORS.



Case Study

MuCEM, Marseille, France

Architect: Rudy Ricciotti

Winner of the Colored Concrete Works Award 2017



Color for Life.

COLORED CONCRETE WORKS®

An initiative of LANXESS

QUALITY WORKS.

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MUSEUM AT THE GATEWAY TO THE MEDITERRANEAN SEA.



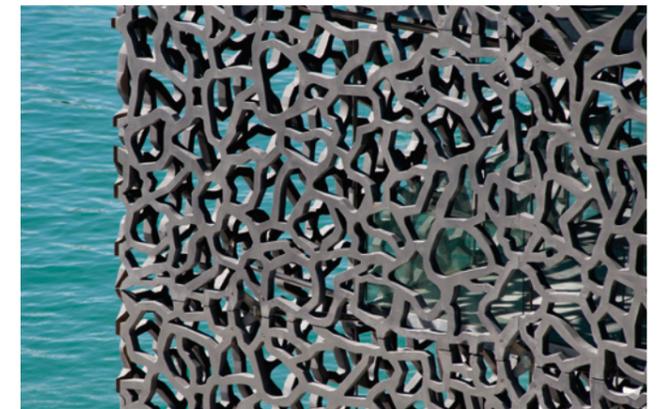
■ At the outer point of the Old Harbor, the dark color of MuCEM contrasts to the beige of the fort, without competing with it.

Harmonious contrast to the environment.

It is the most spectacular museum in the city and one of the 50 most frequently visited museums in the world: the Musée des Civilisations de l'Europe et de la Méditerranée, or MuCEM, in the city of Marseille in Southern France.

In 2013 the Mediterranean harbor metropolis was named the cultural capital of Europe. The opening of the unique museum, which is dedicated to the cultures of the Mediterranean area, is recalled by many as the high point of the cultural capital year. Planned by the highly decorated French architect Rudy Ricciotti, the museum was created at the outer point of the Old Harbor, in the direct vicinity of the venerable Fort Saint Jean. At this location, the angular form and color contrast of the facade to the beige of the fortress walls give MuCEM

its own identity, avoiding competition with its historical surroundings. It was for just this reason that Ricciotti consciously used black-colored concrete as construction material. And what looks like a dark block from a distance is revealed as one comes closer to be a delicate yet stable outer shell, suffused with light and wind: a construction made of ultra high performance concrete (UHPC) that conjures up the nets of the local fishermen and whose color only enhances the impression of lightness. Colored with **Bayferrox®** color pigments, the structure seems to be suspended between sea and sky.



■ The delicate structure of the outer shell lets in light and air.



■ From the ramps, visitors have a view of the harbor and the sea.

A bridge to history.

In the rectangular area of 72 x 72 meters, the outer shell of 384 colored concrete panels rises 19 meters into the sky. It conceals another rectangle with a length of 52 meters – the heart of the museum, containing exhibition rooms up to nine meters high and covering 3,600 square meters. Between these two shells, the interior of glass and the outer of UHPC, the pedestrian ramps rise up nearly to the roof of the building – a very special kind of museum tour, during which the visitors can see and feel the wind, the sun, and the sea. At the end of the tour, a 115-meter-long cantilevered bridge of UHPC extends from the roof terrace of the building over to Fort Saint Jean. From there, another bridge extends to the Panier quarter.

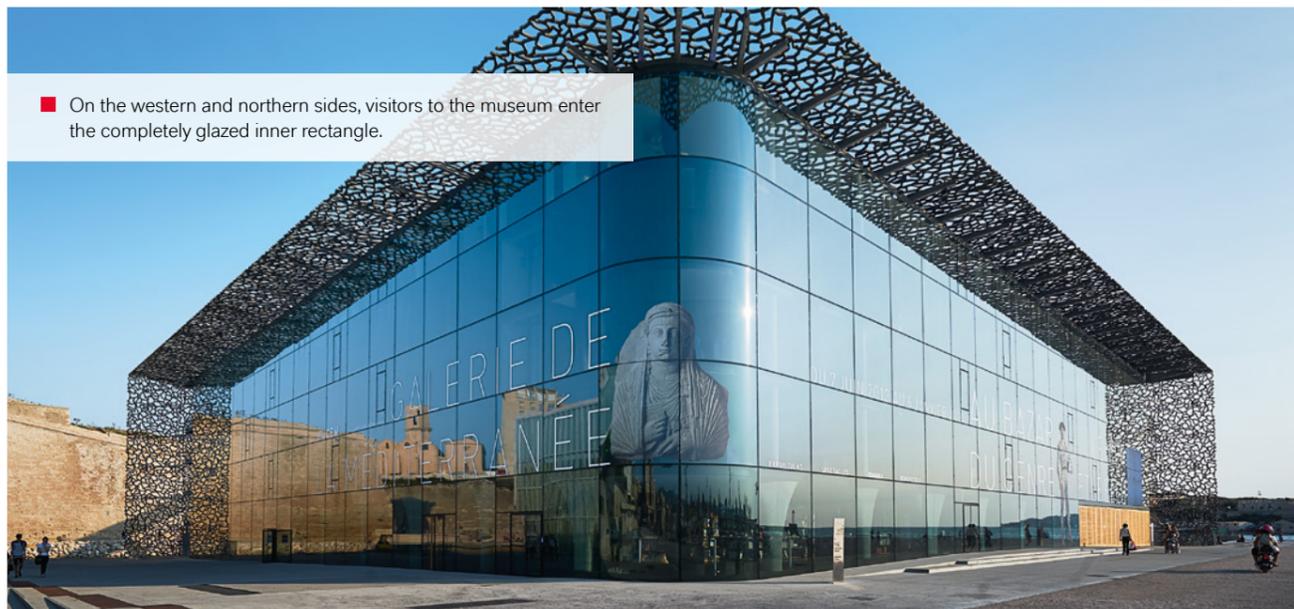
Concrete has a long tradition in French architecture and is therefore viewed as a downright “patriotic” construction material. At MuCEM, the trendsetting use of extremely durable and rugged UHPC in the 3 x 6 meter panels has made it possible to construct an outer shell that is light yet formally complex. The gigantic puzzle of 384 panels is connected and held in place by stainless steel rods, which are connected to concrete supports in the internal rectangle. The cantilevered bridge was constructed of five individual elements.



“COLOR MAKES CONCRETE THE EMBODIMENT OF FUNCTIONALITY AND ESTHETICS”

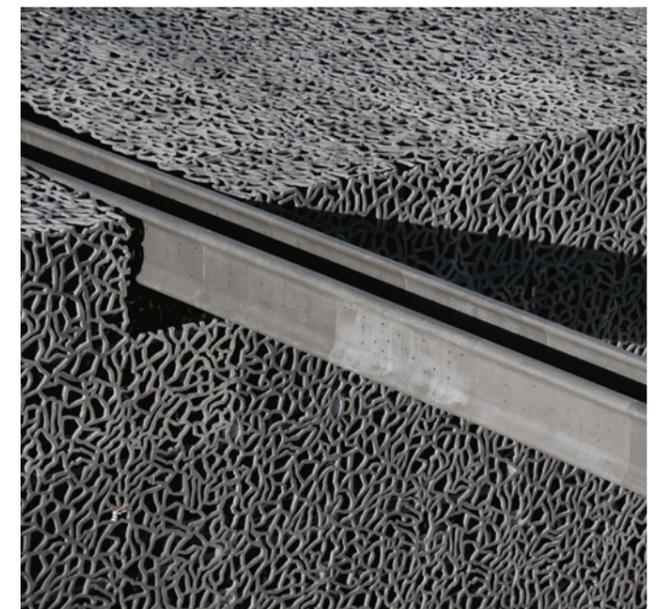
Rudy Ricciotti

Rudy Ricciotti, born August 22, 1952 in Algiers, architect and engineer with degrees at the Ecole d'architecture de Marseille (1980) and the Ecole d'ingénieurs de Genève (1974), has, among other things, been awarded the Grand Prix national de l'architecture. As an architect of lighthouse projects in France, such as the National Choreographic Centre of Aix-en-Provence, he also garnered international renown with projects such as the Footbridge of Peace, Seoul, the Potsdam Nikolaasaal, Potsdam, and the International Centre of Art and Culture, Liège.



■ On the western and northern sides, visitors to the museum enter the completely glazed inner rectangle.

■ The cantilevered bridge takes visitors over to the fort.



LIKE DUST IN THE SUNLIGHT.

Delicate lightness and great stability.

For his design, Rudy Ricciotti was concerned not only about the stability characteristics of the UHPC used, but also its environmental footprint. For instance, all the formed elements and panels were produced and prepared close to the construction site, to keep travel distances short, in order to minimize the environmental effects. Local craftsmen and specialists were also used to increase social identification with the structure.

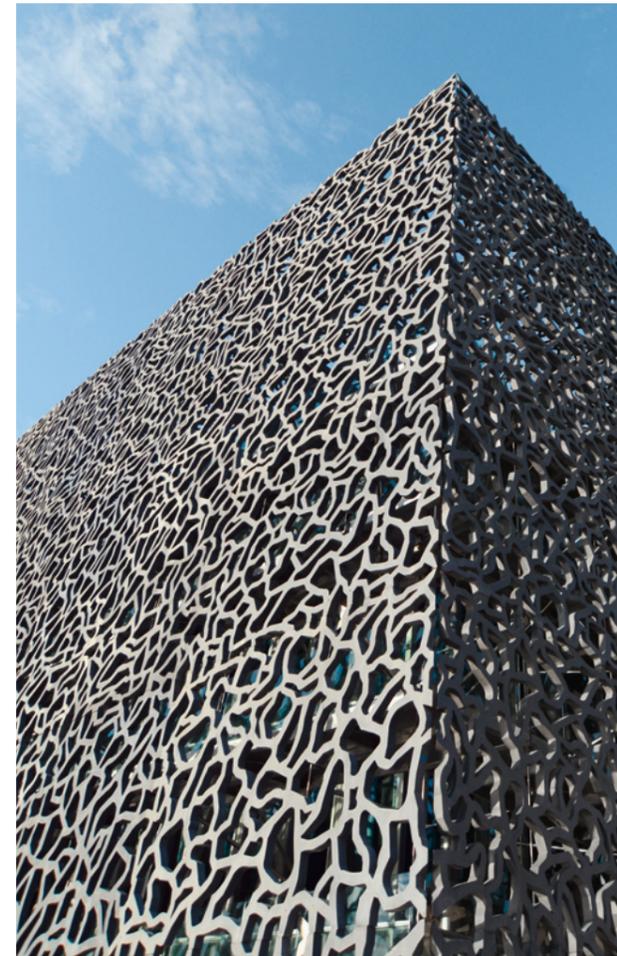
The dark colored UHPC offers protection against the summer heat and, in combination with an energy concept based on the use of sea water and solar energy, also contributes to the reduced primary energy needs of the building: The museum does without conventional systems for heating,

ventilation, and air conditioning. In addition, the material is very long-lasting; UHPC is water resistant and also offers long-term resistance to the salty sea air of the Mediterranean. It is these characteristics that also distinguish the **Bayferrox® 330** and **Bayferrox® 318** used to color the concrete. Like all **Bayferrox®** color pigments, thanks to their outstanding light and weather resistance, they are more than capable of lasting for the concrete's estimated life cycle of at least 100 years. Thus this concrete in the color of dust, immersed in the light of the sun, shows how delicate lightness and great stability can be combined through technological brilliance.

■ A museum as a transparent place for cultural and sensory experience.



■ The structure of the colored concrete panels evokes the nets of fishermen.



PROJECT DATA

Location

Marseille, France

Architecture

Agence Rudy Ricciotti

Principal

The Country of France

Construction time period

November 2009–June 2013

Amount of concrete

1100 m³ precast concrete

250 m³ ready-mixed concrete

Pigment supplier

CHRYSO France

Harold Scholz & Co. GmbH

Pigments

Precast concrete: Bayferrox® 318

Ready-mixed concrete: 80% Bayferrox® 330 +
20% Carbon Black

■ Sun, wind, and sea are ever-present.



Bayferrox® 330 + Carbon Black



Bayferrox® 318

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