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Reflections of migration

In Rotterdam's former docklands, a century-old warehouse has been transformed into a remarkable art museum. At its heart, a double-helix staircase clad in highly reflective stainless steel creates a dramatic contrast with the building's robust industrial structure.



© Nicole Kinsman

Migration is as old as humanity itself and has many causes: economic hardship, political, religious or ethnic persecution, war, environmental change, and the pursuit of education, freedom, or a better life. It is never only a move from one place to another but a deeply emotional process shaped by hope and anticipation, as well as fear, loss, and farewell. To migrate is to leave behind familiar spaces, languages, and relationships. These journeys leave traces not only in individual lives but also in cities, particularly in harbors and stations.

Rotterdam, with its deep-water port and strategic access to the North Sea and the Rhine, developed into one of the world's most important trading hubs and gateways to Europe. Its port expanded rapidly during the 19th century with industrialization and the growth of international trade. Alongside its commercial rise, Rotterdam became a major point of departure and arrival for people from across Europe and beyond.

What better place for the world's first art museum dedicated to migration than Rotterdam? "Fenix" is housed in a historic harbor warehouse completed in 1923 for the Holland America Line, originally known as the San Francisco Warehouse. Severely damaged during the Second World War and by a fire in 1948, it was rebuilt in the 1950s as two separate structures, named Fenixloods I and Fenixloods II. Decades later, Fenixloods II would become home to the museum.

Transforming the warehouse

The historic structure of the building was restored by Rotterdam-based Bureau Polderman. Successive alterations were removed, revealing the original concrete frame and its calm rhythm of robust columns and distinctive window openings. Window frames and sliding doors echo the original green finish.

Within the restored structure, the 16,000-square-meter museum extends over two floors. Around 150 artworks and objects explore migration from different perspectives. The ground floor combines dining and cultural spaces with a large central atrium. The upper floor accommodates most of the exhibitions in two spacious halls, illuminated by large north-facing windows and south-facing skylights that provide abundant, glare-free daylight.

In the center of the museum, Chinese firm MAD Architects inserted a striking contemporary intervention into the century-old warehouse: the "Tornado". Part staircase, part sculpture, and part viewing platform, the double-helix structure rises from the atrium, spirals through the roof, and culminates in a panoramic deck overlooking the city and the River Maas.

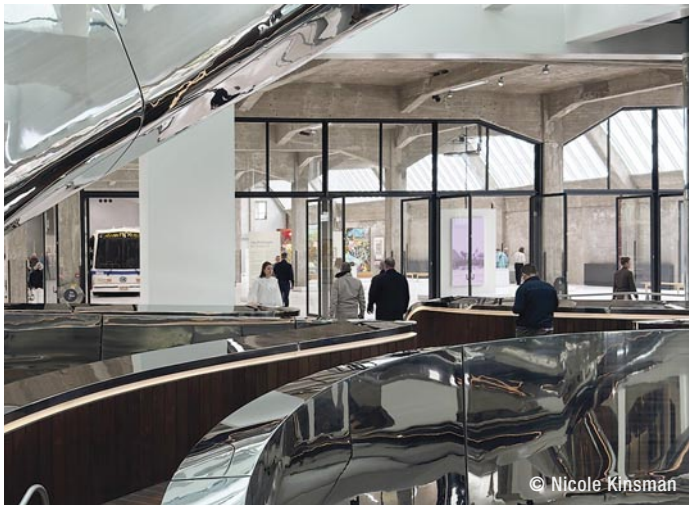


Stretching 360 meters along the quay, the San Francisco Warehouse was once a key hub between Rotterdam and destinations across the world.

Movement in steel

The two intertwined staircases offer different routes up and down. They repeatedly cross and separate to create a dynamic sequence of movement, encounter, and choice. Structurally, the Tornado is conceived as a spatial truss of round steel tubes clad in stainless steel. Its complex geometry enables dramatic cantilevers of up to 17 meters. A white steel framework within the warehouse supports the Tornado, keeping it entirely independent of the historic building.

Raw concrete contrasts with mirror-polished stainless steel and white-coated steel, creating a striking interplay of different surfaces.





Internal stiffeners made of 6 –15 mm thick stainless steel reinforce the Tornado's cladding.



An opening in the mirror-polished stainless steel panel allows the Tornado's spatial truss to connect to the supporting steel framework.

The Tornado's cladding consists of 297 individually shaped panels, fabricated from approximately 400 tonnes of Type 316L stainless steel. The material was selected for its corrosion resistance in Rotterdam's marine-influenced atmosphere, as well as its formability, weldability, and suitability for high-quality surface finishes. The panels are formed into complex three-dimensional shapes from 6 mm thick sheets, with 8 mm sheets used for the underside of the viewing platform canopy and 3 mm sheets for the integrated lighting channels. The cold-rolled, skin-passed 2B finish provided the ideal starting point for fabricator CIG Architecture in Groningen, who polished the material to achieve a mirror-like surface. Selected exterior concave surfaces were given a non-directional brushed finish to prevent excessive concentration of solar heat.

With its fluid, seemingly continuous movement, the Tornado echoes the flows of people, goods, and stories that have shaped Rotterdam's harbor. Its intertwined routes transform the act of moving into an architectural experience, while the highly reflective stainless steel dissolves the boundary between structure and surroundings. More than a means of vertical circulation, the Tornado gives architectural form to themes of movement, uncertainty, encounter, and hope that run throughout Fenix. (Martina Helzel)

The two staircases and a lift lead to the viewing platform 24 meters above ground. Planks of modified wood, known as Kebony, evoke the deck of a ship.

