SPECIAL-PURPOSE LIFTS

Pasărea Măiastră Passenger Platform Lift

Craiova, Romania

Unique hydraulic device allows a passenger to experience an immersion into renowned sculptor's world.

submitted by Marius Paraipan, ELMAS SRL

The architectural spirit of the Constantin Brâncuși International Art Center is built on the work of its namesake, the great Romanian sculptor Constantin Brâncuși. Brâncuși (1876-1957) made major contributions to the renewal of the Romanian language and artistic vision through his work. More than a central figure in the modern artistic movement, Brâncuși is considered one of the greatest sculptors of the 20th century. It is with this spirit and vision that the Art Center commissioned the "Pasărea Măiastră" (Bird in the Air) passenger platform lift. Within the boundaries of the Art Center in Craiova, an underground wing was built and dedicated to Brâncuși, who, though born in the village of Hobița, received his professional training in Craiova as a teenager. The underground wing is topped by a gazebo of glass, a work part architecture, part "optical-art" sculpture that aims to create an optical illusion between several forms often found in Brâncuși's work: square cube-prisms, ovoid form and fusiform volume. At the same time, there is a reference to a project Brâncuși did not carry out: the Temple of Indore. The "Glass Gazebo" inside the Art Center arose from the legend of his uncompleted project, being

A 3D model of the Brâncuși International Art Center

The hydraulic platform (outside view)

The panoramic cabin

Communication system (intercom type)

Drive system onsite (assembling location)

Drive system pre-assembling phase

Fully glass cabin (view from above)

The landing operating panel is activated by card.

Cabin control panel/handrail

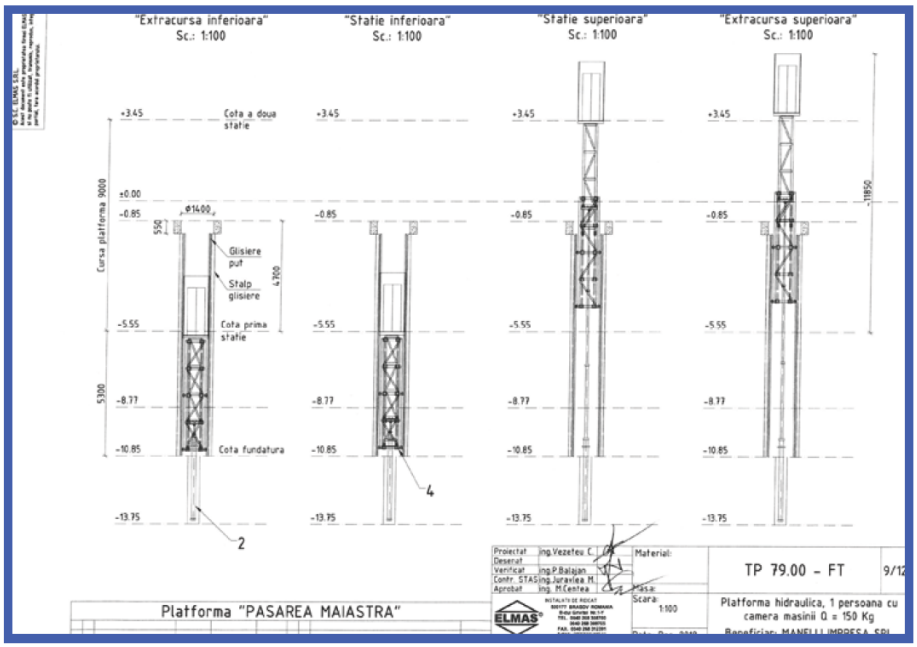
realized of integral glass walls 12 m high and 3 m wide, constituting a prismatic square volume on the outside, while, on the inside, horizontal glass lamellae and an ovoid "being" suggested inside: a silhouette of the "Bird in the Air."

From the underground hall, a platform with a full glass cabin lifts a single person in the middle of the "Măiastră" flooded by outside light. The passenger has the opportunity to experience, in the few tens of seconds the "ascent" lasts, an immersion into Brâncuși's world and what the artist would have wanted to transmit through his work: elevation, peace and light of spirit.

For this unique project, ELMAS SRL delivered and installed a product that fits the proposed architecture and offers a visual, meditative and physical experience through the journey inside the glass prism. After analyzing the project's architecture, ELMAS specialists designed Pasărea Măiastră to be a unique product that complies with all technical, safety and aesthetic rules. The hydraulic platform is intended for vertical

Credits

Elevator designer/manufacturer/installer: ELMAS SRL
Developer: Manelli Impresa SRL, Bucharest Branch
Architect: DS Birou de Arhitectura SRL (Dorin Stefan)
Platform component suppliers: Bucher Hydraulics GmbH; Nyír-lift Kft.; Marazzi; ETN Elastomer-Technik Nürnberg GmbH



Overall drawing

transportation, so it was made in accordance with the Machinery Directive 2006/42/EC with a lifespan of 25 years.

Drive System

The passenger platform runs a 9-m travel height at a nominal speed of 0.15 m/s with a capacity of 150 kg (one person). For the drive system, the ELMAS team designed a technical solution consisting of a centrally positioned hydraulic piston and telescopic metal structure consisting of two segments. All these elements are mounted inside the platform shaft. The platform shaft consists of two sectors: one made of reinforced concrete, and the other formed from the inside of the glass ovoid. At the moment of activation, the hydraulic piston actuates the inner segment of the rectangular metal structure. After the expansion of the inner segment, the platform travel continues by taking over the outer metal segment until the final station is reached. The outer metal segment is guided on four fixed guide rails mounted in the shaft, and the inner segment is guided on another four rails mounted inside the outer metal segment. Upon reaching the maximum stroke point, the platform cabin is completely inside the glass ovoid, creating a unique sensory and architectural effect. The hydraulic unit, supplied by Bucher Hydraulics GmbH, is equipped with protection against overpressure, low pressure and overload, and has an integrated leveling system.

Cabin

The hydraulic platform for the passenger consists of a semiround cabin with the dimensions 960 X 1,125 X 3,100 mm. It is made entirely of glass, offering a 360° panoramic view and an attractive architectural appearance. The manual, center-opening doors are made of glass and offer a sensation of greater space with high visibility. Also, the cabin module has a semicircular handrail of stainless steel, a control panel equipped with an alarm button for communication with the service call center, an emergency stop button that brings the cabin to the main station and a wireless video camera.

Control

The control of the passenger platform lift is performed exclusively by an operator trained by the supplier. It constantly monitors the passengers' access, movement and exit. The landing operating panel has buttons with bright confirmation (for displaying the direction of travel), a screen for viewing the passenger in the cabin, a communication system (intercom type) and a control activation module. To ensure a high level of safety in operation, the platform landing operating panel is activated by means of a card used exclusively by the trained operator.

Before allowing the passenger to enter the cabin, the operator explains the working of the lift. In standard mode, the platform cabin is set from the main control panel to stop at the highest point of travel for 30 s. This time can be set to another value if desired. If the passenger wishes to get to the base station quicker, two options are available:

1) The rider actuates the alarm button, which opens communication with the operator, who then brings the platform to the main station.
2) The rider actuates the emergency stop button, which resets the preset stopping time (30 s) and automatically lowers the platform to the main station.

Main Control Panel

The hydraulic platform is equipped with a main control panel and programmable controller that allows automatic diagnosis of operating parameters and interfaces with the service technician's laptop. The main control panel of the platform is connected to an uninterruptable power supply that activates when the main power source is interrupted. This system ensures that, in the event of a power outage, the cabin moves to the base station. Power is supplied to the cabin by means of a cable system.