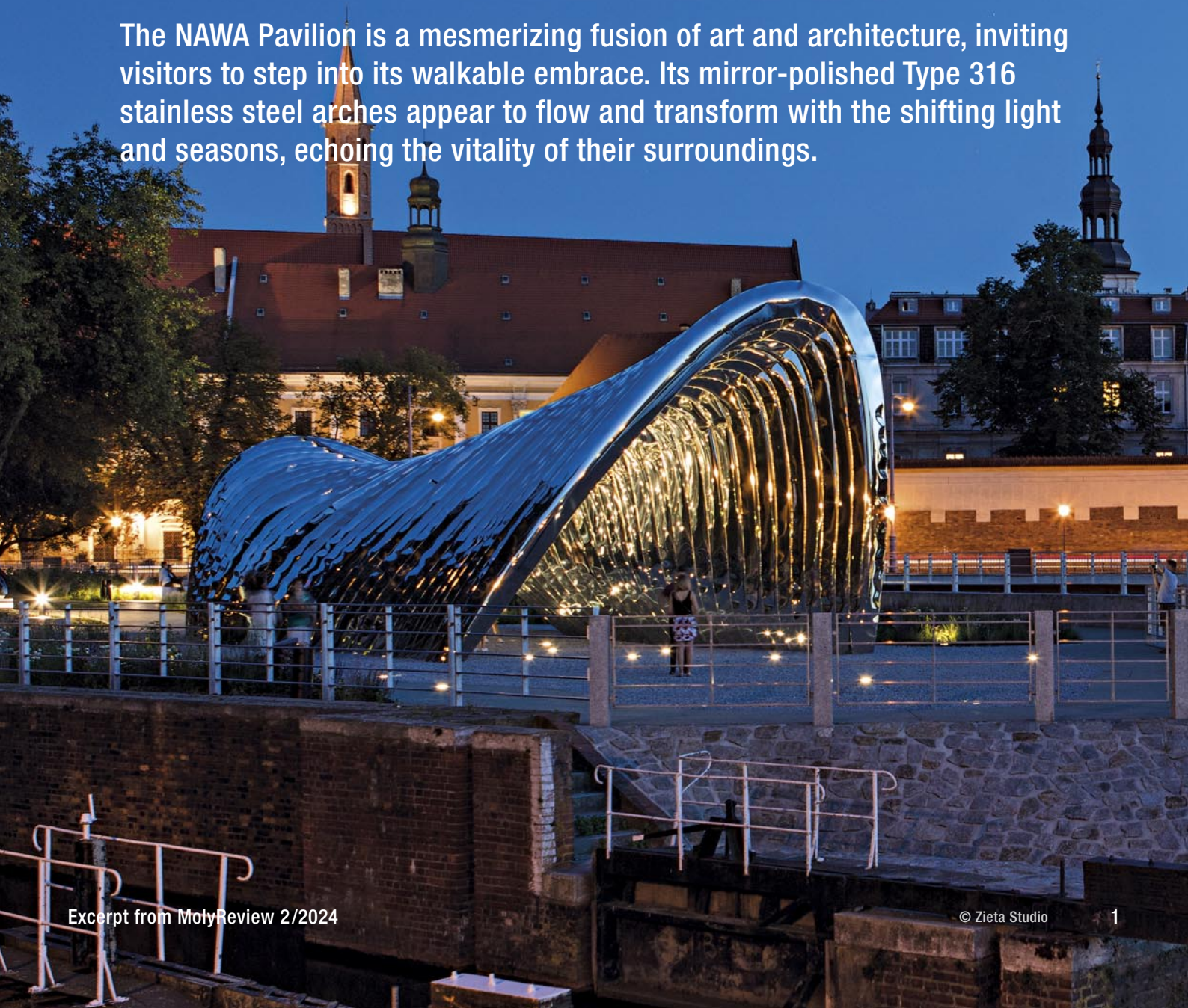




Inflated stainless steel profiles

The NAWA Pavilion is a mesmerizing fusion of art and architecture, inviting visitors to step into its walkable embrace. Its mirror-polished Type 316 stainless steel arches appear to flow and transform with the shifting light and seasons, echoing the vitality of their surroundings.



Daliova is the smallest of over a dozen islands in the Polish city of Wrocław along the Oder River. Surrounded by lush greenery in a prime downtown location, it was long regarded as a “forgotten” island. The spectacular NAWA pavilion by Zieta Studio brought Daliova back to life, transforming it into a meeting place and event venue, thus becoming an integral part of the growing city.

The tunnel-like installation consists of 35 arches arranged in a row, ranging from 4.5 m to 7.5 m in height. Their upward tapering shape references the historical vaults of nearby buildings. Together these arches create an organic form that appears to grow from the ground, harmonizing with the river and the surrounding nature.

Incredibly lightweight, remarkably strong

The arches were manufactured using a technology known as FiDU, which comes from the German term *Freie Innendruck-Umformung* (Free Internal Pressure Forming). In this process, two or more thin, laser-cut metal sheets are welded together at their edges. Then, high-pressure air is blown into the flat shapes, transforming them from two-dimensional forms into readily usable, ultra-light yet durable three-dimensional objects.

This seemingly simple procedure is the culmination of years of research. In 2008, Oskar Zieta, founder of the studio, first used the novel technique he developed to create a stool called “Plopp”. Today, the stool is exhibited alongside other FiDU-blown pieces in prestigious art and design museums worldwide. The studio has developed a variety of objects, including mirrors, lamps, and other furniture, as well as sculptures. With a total weight of 11.2 tonnes and a size of 7.5 m x 10 m x 11 m, NAWA is by far the largest project to date realized with FiDU.

- The arches were fabricated in a shipyard, allowing ample space and Oder River access for transport.



- The mirror-polished stainless steel arches form a gate-like passageway with fascinating reflections.

Controlled loss of control

Starting from the technique of hydroforming, where metal tubes are pressed into a mold under high pressure using a liquid, the studio now also works with air. Instead of using expensive molds, the final shape in FiDU is parametrically calculated. The metal deforms freely according to its properties, with unpredictable undulations manifesting on the surface. While engineers and standards view these curvilinear deformations as defects, Oskar Zieta calls it a “controlled loss of control”.

Despite being only 2 mm thick, Type 316 stainless steel withstands vandalism while offering the corrosion resistance needed in a humid riverside climate. FiDU technology uses this single material to create lightweight, easily transportable profiles that inflate into strong loadbearing structures. This technology holds the potential to move beyond art and design, paving the way to industrial applications. As demonstrated by NAWA, molybdenum-alloyed stainless steel will remain integral to FiDU’s future, combining durability, simplicity, and strength to drive innovation. (Martina Helzel)