

JUMP INTO THE FUTURE WITH UHPFRC

How can the performance of a building material be better demonstrated than with a construction that, due to its slimness and delicacy, gives the impression that the limits of physics are being surpassed?

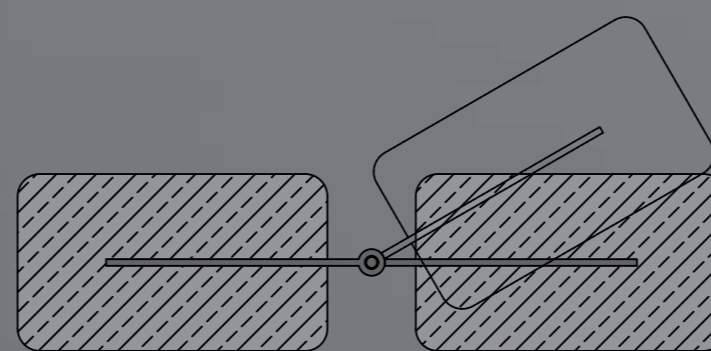
This diving tower was constructed from prefabricated triangles made from “Ultra-High-Performance Fiber-Reinforced Concrete”. This material was selected to ensure the required resistance to environmental influences and other factors in the project area.

The structure can be assembled quickly and without much effort on the construction site. The prefabricated parts just need to be brought into position and fixed with the appropriate metal rod. This system also makes it possible to dismantle the tower and repair, rebuild or reuse it at another location.



The triangular shape, known for its exceptional strength, was utilized in creating this highly robust folding structure. To give the tower the desired inclination, all triangles were distorted according to their respective positions in the element plane. This results in a spatial folded structure as a whole.

Each triangle has a tab on the outer edges that is integrated into the reinforcement and enables the elements to be connected to one another, even in three-dimensional space. The hinges thus allow a rotational degree of freedom along the edge, but block all other degrees of freedom, including the thrust degree of freedom.



The static analysis has already been conducted using structural analysis software, yielding favorable results. Both the dead load and live loads, including snow and wind loads, were applied to the model. The design was carried out based on the “UHPC” guideline of the Austrian Building Technology Association (ÖBV).

