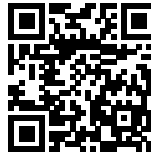




## GLASS BRIDGE: A “TRANSPARENT CORRIDOR” IN THE AIR

*Posted on September 22, 2020 by martabuges*



**Categories:** [Low Density](#), [Project](#), [Senseable Technologies](#), [Territory and mobility](#), [UAD](#)

**Tags:** [Architecture&nature](#), [Bridge](#), [Built landscape](#), [China](#), [Design](#), [Environment](#), [Future development](#), [Glass](#), [High-end technologies](#), [Infrastructure](#), [Innovation](#), [Integration](#), [Landmark](#), [Landscape](#), [Natural dialogue](#), [Optimized construction](#), [Performance](#), [Project](#), [Sustainability](#), [Territory&Mobility](#), [Tourism](#), [Transportation](#)

A bridge is a structure built over the terrain, but also a sort of art that symbolizes connection and communication. Located in Lianzhou, Guangdong Province, the Glass Bridge in Huangchuan Three Gorges Scenic Area, created by the Architectural Design & Research Institute of Zhejiang University Co., Ltd. (UAD), becomes a local landmark that seems to "grow" out of the natural environment. By blending the structure into the natural surroundings and deploying innovative construction methods, the design team realized the seamless integration of nature and artifice.

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## **A Combination of Solid and Void**

Known as the “picturesque corridor in Lingnan region”, Huangchuan Three Gorges is the main tributary of the Beijiang River system in the Pearl River Basin and the end of the Qiangnan Ancient Path. Han Yu, a famous poet of the Tang Dynasty, once wrote a poem to depict its magnificent scenery. The suspended glass bridge spans the cliffs, and overlooks the largest cluster of waterfalls in Northern Guangdong. Like a dragon that soars into the sky, it harmoniously coexists with nature. The bridge is paved with three layers of 4.5-centimeter-thick ultra-clear tempered laminated glass, the visible transmittance of which is 99.15%. The glazing endows the bridge deck with a crystal-like luster, transparency and a high refractive index. Altogether, the glass, the guardrails composed of

curved stainless steel bars, and the bridge tower and red main cables form a built landscape that combines the solid and void, the modern and the classical.



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## **Responding to Site Conditions**

Located in the southeast of China, Guangdong is affected by frequent typhoons in summer. Additionally, due to its large span and flexible structural system, this suspension bridge requires excellent wind-resistance performance. Based on those considerations, the design team carried out wind tunnel testing and finite elements simulation. They analyzed the main frequency and modes of vibration and identified design parameters such as critical flutter velocity and the reasonable degree of enclosure of the guardrails, which provided strong support for optimizing the design and the maintaining the bridge in the future.





Meanwhile, in order to enhance the bridge's lateral sustainability and wind-resistance performance, the designers adopted an oblique wind-resistant cable system, which is fixed to concrete anchors. Moreover, considering the adverse influences of karstification and special residual silty clay on the site, they worked to ensure the safety performance of the bridge during the design and construction phases.









## **An Innovative Built Landscape**

This glass bridge is suspended at a height of 201 meters, with a width of 8.8 meters. Spanning a length of 526.14 meters, it has broken the Guinness World Record as the world's longest glass suspension bridge. Its completion is a miracle. So far, it has become a new local landmark and has been attracting a large number of tourists, helping inject vitality into the local tourism industry.



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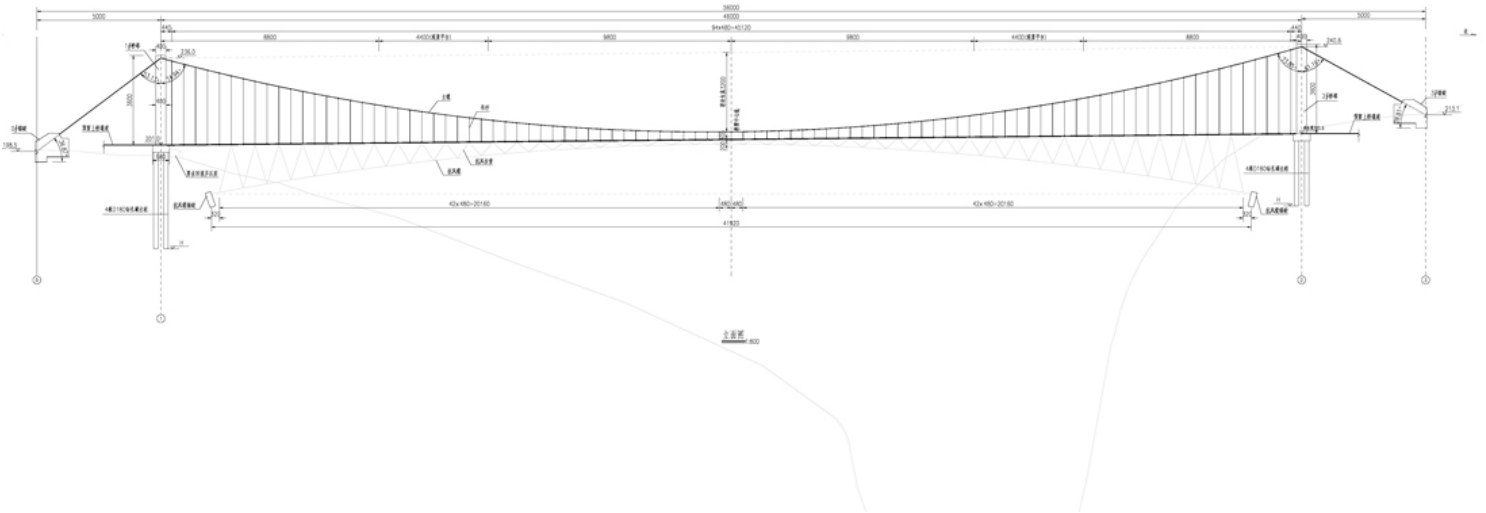
Drawing on respect for the land and nature, clear planning and positioning, creativity, and the courage to push the limits, the UAD team reactivated the natural environment and produced an innovative built landscape that contributes to economic development. Creating built landscapes that integrate nature, city and culture has always been a focus of UAD's design research and practice.

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