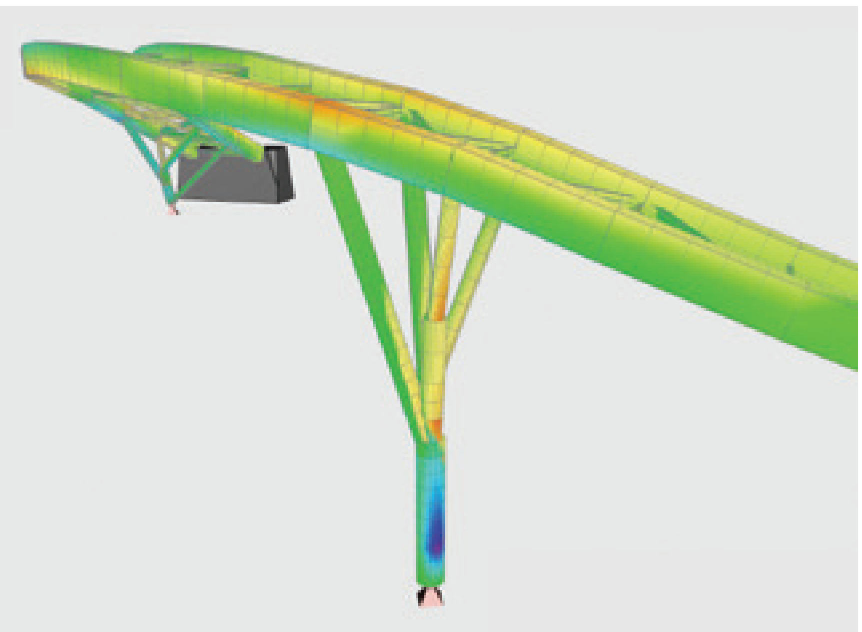
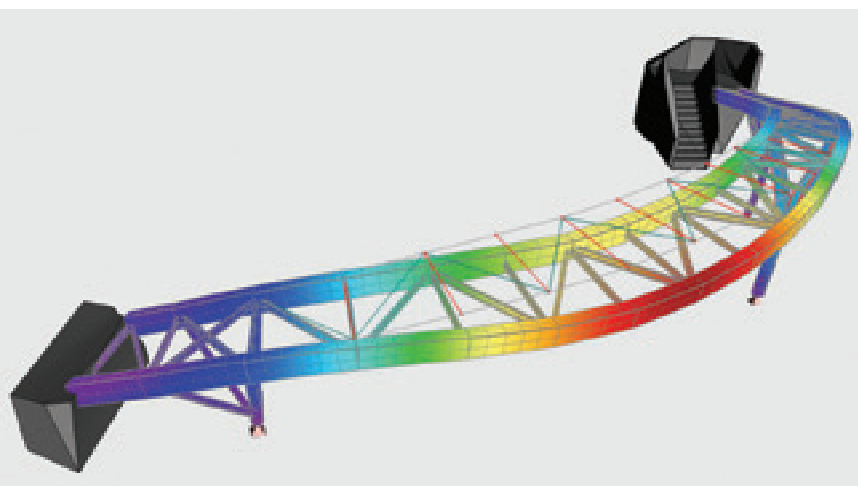
AMERIKANSKI VRTOVI PEDESTRIAN BRIDGE

Opatije, Croatia





City of Opatija ordered a design for a pedestrian bridge across the D66 state road in order to enable pedestrians to have easier access to the “Amerikanski vrtovi” botanical garden. The bridge is mainly shaped as a part of a logarithmic spiral due to difference in the directions and elevations of bridge ends.

The total length of the bridge is 34.5 m and it extends over 4 spans (7.25 m + 6.50 m + 17.90 m + 2.85 m). The bridge has variable width, from 1.52 m to 2.55 m. Three “treelike” columns are supporting its four spans. The bridge steel structure is basically made from two rectangular hollow sections 300/500/12.5 mm that create the main girders connected with horizontal bracing acting as horizontal stabilization.

Due to geometric complexity of the bridge, modelling in SCIA Engineer took advantage of the available BIM interoperability and the architectural model was imported via an IFC file. Also workshop drawings for execution are made with the help of the IFC model. This project could not have been successfully completed without the BIM interoperability and IFC export-import features. Extensive load testing (static and dynamic) was carried out by Institute IGH after the bridge had been assembled on site. For the imposed asymmetrical area load 4 kN/m^2 on one side of the bridge, the displacement measured on-site was 6.6 mm in Point A and 3.0 mm in Point B. The displacement calculated by SCIA Engineer was 6.6 mm and 2.9 mm respectively. It means we reached nearly 100% match between the model and the real bridge.

ENGINEERING COMPANY

US
ULTRA STUDIO D.O.O. ZAGREB

Ultra studio d.o.o.
Andrej Markovic
Pantovčak 27, 10000 Zagreb (HR)
www.ultrastudio.hr

ARCHITECT	DG Arhitekti d.o.o.
OWNER	City Opatija
GENERAL CONTRACTOR	Titan constructa d.o.o.
CONSTRUCTION PERIOD	01/2018 - 06/2018