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Case Study

Custom design for durable steel bridge project

Facilitating flow capacity, structural integrity and custom design requirements for new bridge in Salaj, Romania.

THE CHALLENGE

Aiming to secure the long-term stability and functionality of a bridge in the Almasului Valley in the Salaj region of Romania, the Balan Bridge project was planned to encompass durability, efficiency and sustainability from the outset.

Faced with the challenge of managing the area's hydrological conditions and water flow dynamics, designing a

bridge structure that could effectively manage the water flow drove initial considerations, which also needed to focus on structural integrity under environmental conditions and load demands.

Material selection would also be important to ensure longevity, corrosion resistance and structural strength. A custom design was in order.

Bridge structure that can manage the water flow effectively



THE SOLUTION

With ViaCon as a partner, each of these challenges could be addressed. The bridge was constructed using a custom shape structure of the MultiPlate type VN33 with SuperCor corrugation measuring 381 x 140 mm.

To accommodate the required flow capacity for the area, a total of four structures were used in the construction of the Balan Bridge. The bottom length of each structure is 17.21 metres, and the plate thickness used for the construction is 5.5 mm.

The selection of a steel buried bridge solution offered a cost-effective and efficient way to address the flow capacity, structural integrity, customisation, and longevity challenges of the project, contributing to the development of reliable transportation infrastructure in the region.

THE ADVANTAGE

Building bridges from steel enabled the key performance indicators for the project:

- Sustainability: Steel is infinitely recyclable

- Durability: Steel has a long (100+ year) lifespan
- Efficiency: Building steel structures takes considerably less time than building with alternative materials

SPECIFICATIONS

- Fabricator: ViaCon Türkiye
- MultiPlate VN33 with SuperCor corrugation 381 x 140 mm:
 - Steel - SuperCor, galvanised
 - Thickness - 5.5 mm
 - Top length - 10.32 m
 - Bottom length - 17.21 m

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