ARCHITECTURAL AND STRUCTURAL SOLUTION

The bridge deck is a ferry that connected two small cities, Dénia and San Juan de los Maíles, situated on the mainland and the island of Tabarca, respectively. The bridge is composed of two main spans, each 110 m long, and two approach spans at each end. The main spans are composed of a composite steel-concrete girder system, while the approach spans are made of concrete slabs. The deck is supported by four columns, two on each side of the river, and is connected to the piers by means of transverse beams.

The piers are composed of reinforced concrete elements, and the approach spans are made of precast concrete slabs. The deck is designed to withstand the expected traffic loads and environmental conditions, including wind, temperature, and seismic forces. The bridge is also designed to be aesthetically pleasing, with a visually appealing design that complements the surrounding landscape.

The bridge is constructed using advanced engineering techniques and materials, and it is a significant example of modern bridge engineering. The project involved close collaboration between the designer, the contractor, and the clients to ensure that the final product met the requirements and expectations of all parties involved.
Fig. 4 - Bridge structure. (a) Overall view; (b) Cross-section of the pylons and bridge deck. (b) Cross-section of the pylons and bridge deck.

**CONCLUSIONS**

The bridge was designed by the public and professional architects. The bridge structure and construction of the piers and superstructure were concurrently completed at both banks. The pylons and superstructure were constructed at the same time.

**PROCESS OF CONSTRUCTION**

For the construction of the side spans and piers, artificial steel beams were pre-cast and then lifted into the final position. The bridge structure was then erected. The pylons were then lifted into place after the deck had been completed.

**CONSUMPTION OF MATERIALS**

- **Concrete:** 7117 m³
- **Steel:** 246.9 t

**SLOT & DYNAMIC ANALYSIS**

The structural solution was developed on the basis of a detailed static and dynamic analysis. A tender design was selected by the ANSYS program. The structure was modeled as a 3D structure composed of steel and concrete elements. The model was then analyzed using ANSYS. The deflection of the bridge deck was calculated for the full span and for the deck section. The results were then compared with the design values for the bridge deck.

**ZÁVĚR**

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**SPOTŘEBA MATERIÁLŮ EBRO**

<table>
<thead>
<tr>
<th>Material</th>
<th>Quantity</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Concrete</td>
<td>2715.1 m³</td>
<td>469.9 t</td>
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<tr>
<td>Steel</td>
<td>1086.6 m²</td>
<td>35.2 kg</td>
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<tr>
<td>Concrete (floor)</td>
<td>708.6 m²</td>
<td>78.5 kg</td>
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<tr>
<td>Concrete (pier)</td>
<td>111.3 m²</td>
<td>18.3 kg</td>
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