

# PONIATOWSKI BRIDGE & VIADUCT IN WARSAW – SAFETY OF PEOPLE AND STRUCTURE VERSUS CONSERVATION REQUIREMENT

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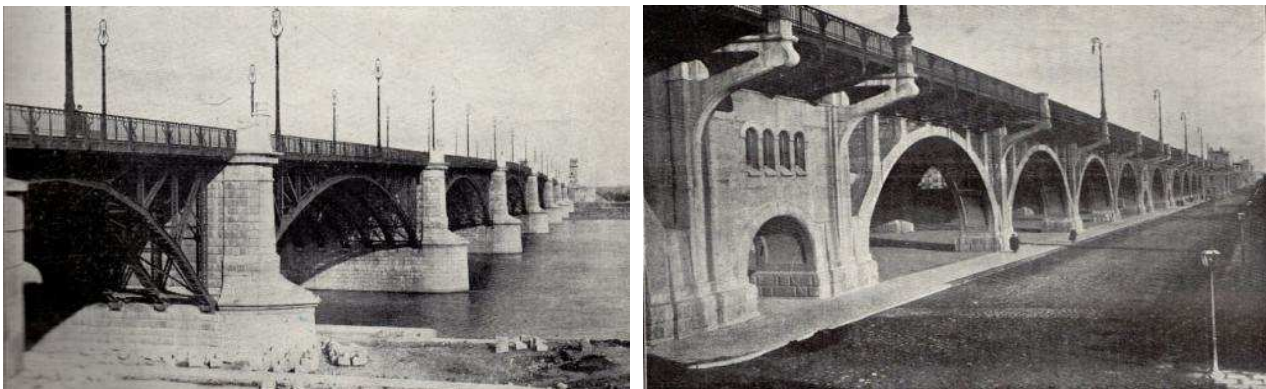
## SUMMARY

Poniatowski Bridge and Viaduct across Vistula River in Warsaw, Poland was damaged during I and II World War and rebuild after them. Total length of the bridge is 504.00 m and of the viaduct is 701.00 m. From 50-ties XX century up to now both of them were modernized 3 times at least. The piers and foundations are more than 100 years old. Concrete girders of the viaduct (35 spans) are in similar age but were repaired in 80-ties. The frame concrete stiffeners were exchanged in that time as well as the deck (steel gird with concrete plate). The same kind of deck is placed on steel girders of four truss spans and four arch spans of the bridge. The first ones are 30 years old but the second one serve from 1946. During this long history everything was changed – materials, traffic loads and environmental requirements about vibration of structure and noise generated by trams and cars. Bicycle traffic also groves rapidly. All of these factors force modernization according to contemporary requirements but against many conservation regulations.

**Keywords:** *Truss Bridges, Arch Bridges, Reconstruction, Restoration, Refurbishment, Conservation Requirements.*

## 1. INTRODUCTION

Poniatowski Bridge and Viaduct across Vistula River in Warsaw, Poland was designed and build in 1904-1913 (Fig. 1). The bridge was damaged during I and II World War and rebuild after them. Total length of the bridge is 504 m and of the viaduct is 701 m. From 50-ties XX century up to now both of them were modernized 3 times at least. The piers and foundations are more than 100 years old. Concrete girders of the viaduct (35 spans) are in similar age, but they were completely repaired in 80-ties.



*Fig. 1. Poniatowski Bridge and Viaduct in Warsaw, Poland -1914 [5].*