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Design features of the Cable-stayed Bridge between the islands of Cebu and Mactan (Republic of the Philippines)

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ABSTRACT

The cable stayed between the islands of Cebu and Mactan is the main work of the road concession Cebu-Cordova Link Expressway. Its 390-m long main span over the Cebu port navigation channel turns it the longest cable-stayed span in the Philippines. This paper provides an overview of its design features emphasizing the distinctive constraints that include high seismicity, geological variability, high wind speeds due to frequent typhoons and large ship impact loads.

Keywords: Cable-Stayed Bridge, cantilever, prestressed concrete, seismic design, spatial variability

1 INTRODUCTION. BACKGROUND

The Cebu-Cordova Link Expressway (CCLEX) project aims to relieve the heavy traffic between Cebu - the second largest city of the Philippines - and the town of Cordova, on the island of Mactan, where the international airport is located. This involves laying a new road that avoids passing through the centre of Cebu with a 3 km long structure of which the most relevant is a cable-stayed bridge with a span of 390 m over the port navigational channel. It is extended at both sides with access viaducts with girders of precast beams.

The project was carried out in the form of *Early Contractor Involvement (ECI)* organised by the Metro Pacific group [1] and awarded to the JV CEBU Link led by ACCIONA in partnership with the local companies First Balfour and D.M. Consunji Inc. with an approximate budget of 400 million USD.

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