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Large Scale Immersed Tube Tunnel of Hong Kong Zhuhai Macao Bridge  
--- Engineering Challenges and Innovation

Abstract

The Hong Kong-Zhuhai-Macao Bridge (HZMB) is a grand sea-crossing link under construction. As a key part of the national highway network, the HZMB connects Hong Kong on the east bank of the Pearl River Delta to Zhuhai and Macau on the west bank. It will provide a significant part of the Pearl River Delta regional transportation loop - being a key new highway transport corridor crossing the Pearl River Estuary (Lingdingyang) and connecting the east and west banks of the Pearl River.

HZMB, of 120yr design life, will carry a dual three-lane carriageway with a design speed of 100km/h. It would shorten the journey time between Hong Kong and Zhuhai/Macao from currently 4 hours to a half hours.

The total length of bridge cum tunnel is about 35.6km, in which the sub-sea tunnel section is 6.7km long using immersed tube tunneling method.

To accommodate the passing of 300,000 tonnes vessels, the sub-sea tunnel will be approximately 40 m below the seabed. It is a largest immersed tunnel in an open sea environment under construction in the world.

This talk will discuss the engineering challenges, risk management and innovative solutions for the tunnel construction.

Biography

Dr. Morgan Yang is a vice president of Transportation Infrastructure, China, AECOM. Dr. Yang has over 30 year experience in the research, planning, design and construction management in civil engineering. He specializes in urban development, railway transit, bridge and tunnel engineering with unique global expertise in the planning, design and programme management of large scale infrastructure projects.

Dr. Yang has published over 60 technical papers in journals and proceedings. He is an editor of technical journals “Tunnel Construction” and “Bridge”. He is a registered engineer in Hong Kong, a chartered engineer in UK and a member of Hong Kong Institution of Engineers, a fellow of Institution of Material, Minerals & Mining.

Dr. Yang received an outstanding alumni award from Hong Kong University of Science and Technology.

Dr. Yang has been appointed as an external academic advisor for the City University of Hong Kong, Hong Kong Open University and Royal Melbourne Institute of Technology.

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