



## Design & Construction of Duta – Ulu Kelang Expressway (DUKE Ph2) – Tun Razak Link (TRL) in Kuala Lumpur

**P.R.K.S. Srinivas**

*MMSB Consult Sdn. Bhd. Selangor, Malaysia*

**Tham Beng Choy**

*EKOVEST Project Management Sdn. Bhd. Kuala Lumpur, Malaysia*

Contact: [srinivas.prks@mmsbconsult.com.my](mailto:srinivas.prks@mmsbconsult.com.my)

### Abstract

The Duta – Ulu Kelang Expressway (DUKE) Phase 2 is an infrastructure development under transformation programmes undertaken by the Government of Malaysia through Concessionaire Konsortium Lebuhraya Utara – Timur (KL) Sdn. Bhd (KESTURI). The proposed Tun Razak Link (TRL) is a part of DUKE Phase 2 project that involves design, construction, operation and maintenance of 9km long elevated dual 2-Lane highway with 24.9m wide mainline deck including directional ramps, interchanges and ramp toll plaza in Kuala Lumpur [1]. The project alignment is in densely developed urban environment and traverses over existing arterial roads, crosses urban arterials, expressway, river and acts as an effective traffic dispersal system between existing road network to alleviate traffic congestion on at-grade local roads. The majority length of the project is an elevated structure to minimise the land acquisition, least disturbance to road users, adjoining developments and utilities. Various types of super structure viz., precast T-beams, U-Beams, crossheads, cast in-situ box girders were adopted besides various types of foundation & substructure with longest span being 51m. This paper aims at presenting an insight of various types of designs, innovative methods adopted to suit the site constraints and interfacing issues to meet project timeline, cost effective design approach during construction of TRL.

**Keywords:** traffic dispersal; design development, geometry; bored pile, spun pile, micro pile, EPS light weight fill, precast crossheads; cast in-situ box girders; R.C. multi cellular box, interfacing; utilities.

### 1 General

The economic reforms and transformation programmes envisaged by Government of Malaysia resulted in rapid growth in Kuala Lumpur City Centre and other central business districts in the surrounding vicinity. This rapid spur in various infrastructure developmental activities in the region triggered increased vehicular population to/from the Kuala Lumpur City Centre causing

severe congestion. Current public transport system together with existing highway/road infrastructure is still inadequate to serve the traffic demand. Hence the need to provide effective highway dispersal systems that are integrated with existing and proposed public transport system to enhance the traffic dispersal there by alleviating the traffic congestion to the extent possible.

The Government of Malaysia has embarked on various transformation programmes to transform