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Work in progress: The 3.3km Bukit Merah Marine viaduct will replace the existing bund and allow free flow of water at the lake.

On the right track

Electrified double-track project from Ipoh to Padang Besar 43% completed

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THE electrified double track project (EDTP) that is taking shape from Ipoh, Perak to Padang Besar, Perlis is now 43% completed.

It has been two years since work on the project, jointly undertaken by MMC and Gamuda began.

MMC-Gamuda Joint Venture EDTP project director Yeoh Hin Kok said the project started in January 2008.

However, Yeoh said like any other mammoth projects, there were bound to be challenges and uncertainties to be faced till the project is completed.

In an interview with *StarMetro* recently, Yeoh shared how the contruction of the Bukit Merah Marine viaduct and the Berapit Tunnel, both in Perak, had given him sleepless nights.

Yeoh: When it is ready, a trip from KL to Penang is expected to take only three hours.

The 3.3km viaduct, which crosses the northern tip of the Bukit Merah Lake, is a low-lying single-function bridge made up of 23m x 15m spans designed solely for high speed trains.

During construction of the viaduct, Yeoh said the engineering team encountered unfavourable water levels which made it difficult for marine vessels and barges to access.

"We needed to have good planning before mobilising it when the tide was right," said Yeoh, explaining that the team had to start working on the viaduct at different points of the bridge.

Once completed by the year-end, the new marine viaduct will replace the existing bund. It will also enable the Drainage and Irrigation Department (DID) to raise the current maximum water level at the lake by 3.5ft – an advantage in terms of storing water for farming and irrigation.

Another challenge was the twin bore rail tunnels at Bukit Berapit which is another key feature of the EDTP project.

The two 3.3km tunnels measuring nine metres in diametre runs parallel to each other and is only 20 metres apart.

A 2.3km stretch from the beginning of the tunnels are fully lined with concrete.

Yeoh said they first had to put piped arches around the horseshoe-shaped tunnel to identify the fork zones before blasting the bench formation of the rock and finally the drilling and blasting, before getting the job done.

This section is then followed by a 1km cut-cover section and ending with an additional 90m area.

Yeoh and his team of 70 local workers had to deal with 'live traffic' as they worked beneath the North-South Expressway and an existing trunk road which connects Kuala Kangsar to Taiping.

For the additional 90m section of the tunnel, the team had to use a tunnel boring machine for its micro tunnelling works under the busy expressway.

However, Yeoh said there was nothing to worry about as the team constantly monitored the condition of the soil with inclinometers to indicate the condition of the slope.

Settlement markers have also been placed to measure the settlement of the ground at all times around the site.

Other infrastructure works that are ongoing include earthworks and soil improvement, pond reclamation, drainage works, bridge works, tracks, building of depots, yards, and stations.

"At present, there are about 7,000 people working on site, 80% of whom are Malaysians.

"It was not easy at the beginning, even for our workers as we had to ensure their safety especially when working near tracks with 'live traffic'," said Yeoh.

He also made sure the workers took note of the residents and children who lived near the railway tracks as they often used the site as as a playground.

Once completed in December 2013, the EDP would be able to cater for high-speed trains capable of travelling at 160km per hour. The trains will pass through four states – Perak, Penang, Kedah and Perlis.

"When it is ready, a trip from KL to Penang is expected to take only three hours," said Yeoh.

The 329km EDTP will also be replacing the existing single-track diesel-powered trains.