



### **Technical Visit to “Merdeka PNB118” Site** by Ir. Tiong Choong Han and Ir. Jagjeet S. Sidhu

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The Urban Engineering Development Special Interest Group (UEDSIG) organised a technical tour of the construction site of “Merdeka PNB118” on 14 May 2019. “Merdeka PNB118” is a mixed development project which is situated on a 7.7ha (or 19-acre) plot, approximately 100m north of the historic Merdeka Stadium Park in Kuala Lumpur, Malaysia. The project is owned by Permodalan Nasional Berhad (PNB), a fund managing company, and is being developed by its fully-owned subsidiary PNB Merdeka Ventures Sdn. Bhd. (PNBMVSB) with an estimated development value of RM5 billion.

The entire development is divided into 3 phases and is projected for completion in 2024. Phase 1 consists of a 118-storey tower building with a 7-storey podium housing a shopping mall. Construction of Phase 1 began in March 2014 with the award of the foundation works contract to Pintaras Geotechnics Sdn. Bhd. Currently, construction of the superstructure for the tower building by JV - UEM Sunrise Bhd. and Samsung C&T Corporation is in progress. Work has reached the 60<sup>th</sup> floor level and is projected to progress to the final 118<sup>th</sup> floor level in 2020, based on an approximate construction rate of 7 days per floor.

The 118-storey tower building has a unique diamond-shaped facade and will provide 82 floors of office space and 18 floors for a luxury hotel, while the remaining 18 floors will accommodate a sky lobby that includes observation decks and associated mechanical and electrical facilities. The 7-storey podium shopping mall will have 900,000 ft<sup>2</sup> of retail space including a 5-level basement car park. The building is designed by Fender Katsalidis Architects of Melbourne, Australia, in partnership with local firm RSP Architects of Malaysia. When completed, the 118-storey tower will stand at 635m and be the tallest building in South-East Asia.

The participants who had gathered that morning at the 2-storey PNB118 site office were given a warm welcome by Tengku Dato’ Ab. Aziz Tengku Mahmud, Chief Executive Officer of PNBMVSB. Tengku commenced the presentation by providing a briefing on the history, background and company structure of PNB. Next, he briefed the participants on the existing landmarks (Merdeka Stadium and Stadium Negara), the on-going PNB118 development, as well as the future plans for Merdeka Stadium Park land (which include upgrading of the existing Merdeka Stadium and Stadium Negara, and development of a central park next to Merdeka Stadium).

Supported by a project management team from Turner International's Malaysia office, he then explained the complex architecture and structural design of PNB118. Architecturally, custom-made glass panels imported from China will be used to create the diamond-shaped facade. A scaled-down model of the building facade was erected beside the site office to facilitate a review of the final facade design in order to ensure that daytime glare caused by external reflection of sunlight by the panels will not be an issue. Initially, for foundation works, bored piles up to 60m in length were installed to form a large continuous circular ring, after which a reinforced concrete wall was constructed for the basement structure.

The main tower building construction utilizes slip-forming for its central lift core walls with perimeter reinforced concrete columns (in excess of 3m x 3m) forming an out-rigger type configuration. Each of the floor levels comprises steel beams connected to columns and core walls, which then support a composite (steel deck and concrete) floor.

PNB118 will become the first iconic building in Malaysia that will satisfy three local and international green building platinum accreditations. They include certifications for Green Building Index (GBI), Green Real Estate (GreenRE), and Leadership in Energy and Environmental Design (LEED). Most importantly, this urban engineering development incorporates major infrastructure plans to improve accessibility, either via public transport or private vehicles.

The Merdeka Mass Rapid Transit Station (MRT) is already in operation while infrastructure works are under way to construct two tunnels for vehicular access to the tower from strategic points allowing for greater connectivity to and from major highways.

Tengku concluded by emphasizing on PNB's strategy to include the existing Merdeka Stadium and Stadium Negara in the project masterplan to enhance the value and attractiveness of PNB118. The highly informative presentation by Tengku was then followed by a lively Q&A session, and an exchange of souvenirs between Tengku and UEDSIG's advisor Ir. Dr. Wang.

The participants were then given a guided tour of the PNB118 construction site after the presentation. Tengku also accompanied the participants to a vantage point located within the existing Merdeka Stadium which provides spectacular views of the entire development.



The visitors posing posing for a photograph at Merdeka Merdeka Stadium with “Merdeka PNB118” in the background.



An architectural rendering of “Merdeka PNB118”