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# Melaka Gateway

## Reclamation

The Melaka Gateway is located in Melaka City, on the northern side of the Straits of Melaka, around 150km southeast of Kuala Lumpur. The Melaka Gateway Project is a mixed development project, functioning as an ecotourism site, free trade economic zone, commercial and property development, deep sea port and a maritime industrial park.

G&P Professionals Sdn Bhd was appointed by Sinohydro Corporation (M) Sdn Bhd (Design and Build Contractor for 3 reclaimed islands of about 600 acres i.e. PME 1 Island, PME 2 Island and PP Island) as the Consultant for reclamation works.



**PME 1 Island, PME 2 Island and PP Island**

Generally, the subsoil consists of 10m to 24m thick of soft compressible layers with undrained shear strength varies from 5kPa to 30kPa. In view of these, it is imperative that the reclamation work designs address the two main issues: the settlement and reclaimed embankment stability.

Ground treatment is required when the stability of the embankment is unable to achieve the required factor of safety in the most critical condition during construction stage. In addition, ground treatment is also required to shorten the construction period especially to expedite the dissipation of excess pore water pressure during construction stage. Basically, the application of ground treatment is to improve the soil strength and reduce the long-term settlement of the soft founding soils. This allows the subsoil to support the embankment with the

required factor of safety within the serviceability limit stage. Ground treatment techniques such as temporary surcharge, prefabricated vertical drain (PVD) and staged construction are proposed to satisfy both settlement and stability criteria. The length of PVD varies from 10m to 24m.



**Offshore PVD Installation**

The failures of reclaimed embankment constructed over soft clay are closely related to the magnitude and history of the deformations which took place before failure. Therefore, the information obtained from field instrumentations measurements are used to ensure the safe construction of embankments.

Instrumentation measurements are used to assess the performance of PVD and timing for surcharge removal. The Asaoka plot is used to determine the degree of consolidation for surcharge removal.



**Onshore PVD Installation**