



Asia

# Behaviour of Reclamation Settlement of Houses

## Description of Work

A new reclamation in Hong Kong was developed for high-rise buildings and low-rise houses. A soft Marine Deposits layer underlies the reclamation. The shallow foundations of the houses were founded in the reclamation fill. During construction, the houses settled by up to 250 mm and tilted by 1:400.

The developer commissioned GCG (Asia) Ltd to investigate the reason(s) behind the large settlements and to estimate the long-term settlement/tilting of the houses. GCG (Asia) reviewed the ground conditions and construction records of the reclamation, interpreted the settlement data, and proposed new settlement markers. GCG (Asia) found that the underlying soft Marine was still undergoing consolidation settlements in response to the recently placed surcharge mounds. Creep of the reclamation fill also contributed to the observed settlements. Using the Asaoka and hyperbolic Tan graphical methods and the inverse exponential function, the settlement data was utilised to estimate the long-term settlements of the reclamation and the tilting of the houses.

Based on the investigation outcomes, GCG (Asia) advised the developer and the Engineer on the possible long-term behaviour of the houses.

*Client:* Confidential

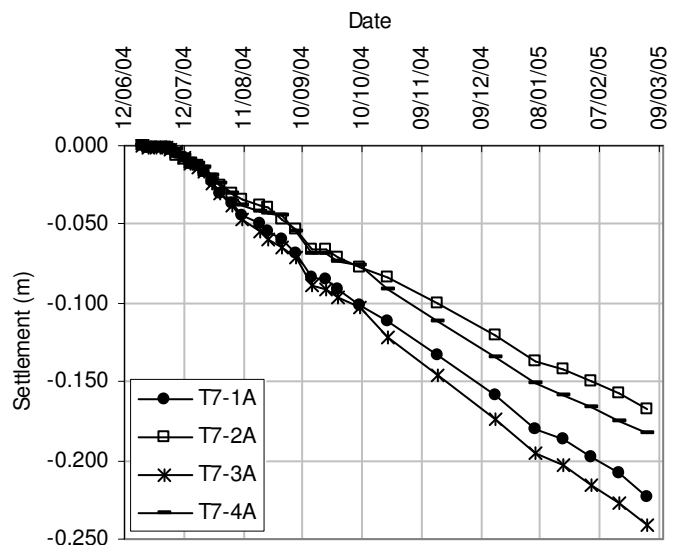
*Date:* 2004 – 2005

*Approximate*

*Project Cost:* Confidential



**Settlements Induced Cracks**



**House Settlements**