



Key achievements

- Complied to stringent airport safety standards
- Equipment innovation to allow limited headroom stone column construction

The project

The works involved land reclamation as part of the Hong Kong airport island and building a road to connect the Zhuhai bridge to the crossing facilities. Keller was engaged to carry out ground improvement work using Vibro stone columns to support the reclaimed land seawall.

The challenge

Working beside the airport and runway, one of the major challenges was machine height restrictions. Some areas were only allowed to use as low as 16m high machinery. Keller developed a telescopic vibro stone tube that enabled the installation of Stone columns for half of the area while the remaining were carried out during runway closure. Keller had also carried out a site trial showing our ability to evacuate within half an hour on emergency cases where the runway is needed.

The solution

Keller carried out reclamation works using gravel between 4m to 7m thick. The gravel layer was densified as the Stone columns were installed. To minimize the difficulty of retrieving the stone column tube, pre-drilling down to 9m was carried out. Working under stringent requirements, our team completed the work with no incidents and no disturbance on the airport operations.

Application

Ground Improvement/
Bearing Capacity

Technique

Vibro stone columns

Market

Infrastructure / Roads

Client

Hong Kong Highway
Department

Main contractor

China State Construction
Engineering

Contract Value

HK\$111,000,000.00

Keller business unit (s)

Keller ASEAN