



Serendah Industrial Complex (Dynamic Compaction & Dynamic Replacement)



menARD

# YOUR LOCAL SPECIALIST IN GROUND IMPROVEMENT

Menard is a pioneer in ground improvement work in the world providing a variety of ground improvement methods to suit the specific needs of each project. Based on our experience spanning more than 5 decades, we have successfully developed innovative and sustainable methods to meet the needs of our clients. The main goal of our company is to always be at the forefront of technological advancements in this field and to be able to provide efficient, reliable and economical solutions. Our leading expertise is built on field experience, numerical modeling capabilities, as well as the development and optimization of special construction equipment.

**M**enard Geosystems offers a variety of effective and innovative solutions for different types of buildings, including highways, airports, ports, commercial buildings, and industrial and energy infrastructure.

**M**enard has been working in Malaysia and since 1978, designing and implementing projects using various ground improvement methods.



LDP Puchong Interchange, Selangor  
(Stone Column)



Institute Kemahiran Belia Negara  
(Prefabricated Vertical Drain)



EDT Project Section 5  
(Stone Column)



Single Storey Factory on Kuala  
Langat (Prefabricated Vertical Drain)



# Our Solution

Menard Geosystems offers solutions that are always reliable, consisting of various types of ground improvement methods designed by our geotechnical experts according to the client's problems and specifications. The solutions we offer are efficient, effective and environmentally friendly ground improvement methods. Menard Geosystems and offers a variety of ground improvement solutions through consolidation, compaction and reinforcement methods.



## Prefabricated Vertical Drain

Prefabricated Vertical Drain technology is closely related to the consolidation process. Often applied with the surcharge fill, it is one of the most reliable and certainly the most economical ground improvement method to treat soft cohesive soils.



## Menard Vacuum Consolidation

Menard Vacuum™ is used to accelerate consolidation of cohesive, highly compressible soils. The process consists in creating a negative pressure under an airtight membrane laid over the ground, which generates atmospheric pressure on the soil, equivalent to the pressure exerted by a 4 metre embankment.



## Rapid Impact Compaction

Rapid Impact Compaction is a ground improvement technique that densifies the ground by pounding it at high frequency with a medium sized pounder.



## Dynamic Compaction

Dynamic compaction is a ground improvement technique that densifies the ground by repeatedly pounding it with a high energy pounder.



## Vibrocompaction

Vibrocompaction is a ground improvement technique. It is used to control and reduce settlement, mitigate liquefaction, stabilize or treat hydraulic fill and limit lateral earth pressure behind quay walls.



## Dynamic Replacement

The Dynamic Replacement (DR) columns are formed by a heavy pounder with a weight ranging from 15 to 30 tons drops from a height ranging from 10 to 30 m on a 0.6 to 1.2 m thick working platform prepared on the construction site using non-cohesive soil.



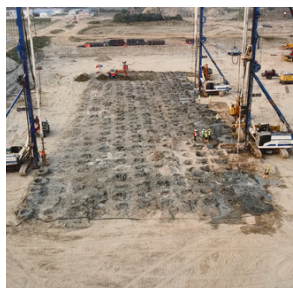
## Stone Columns

Stone columns is a ground improvement technique that reinforces the ground with a network of stone compacted columns.



## Controlled Modulus Columns

Controlled Modulus Column was invented by Menard in 1990s as a cost effective alternative to piles. It increases the stiffness of the treated soil mass by allowing effective load sharing between the soils and the columns.



## Deep Soil Mixing

Soil Mixing is a ground improvement technique that reinforces the soil by mixing in situ a network of grout and soil columns.



## Jet Grouting

Jet Grouting (JG) uses high velocity jet of grout to destroy the soil structure and simultaneously mix cement grout into the in-situ soil to form inclusions.

## Menard Geosystems

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