CIVIL & UTILITIES

Soil Improvement at IITC Site
Osberstown, Naas

Customer
Irish International Trading Corporation,
Tramore Road,
Cork

Design Team

MMOS Consulting Engineers
Unit 200,
Greenogue Business Park,
Rathcoole,
Co. Dublin

DESCRIPTION
As an integral part of the design development of the new Distribution Centre for Irish International Trading Corporation in Naas, Co. Kildare, Vision in conjunction with MMOS Consulting Engineers, reviewed soil treatment options in order to remediate a site containing a mix of weak & part saturated soils.
Following extensive laboratory testing of the soils during the course of a number of months, Lime Stabilisation was chosen as the most suitable soil stabilisation technique for the 10 acre site. This in turn reduced the expense associated with removing unsuitable material off site to landfill together with reducing the importation of suitable material in order to provide on-site sub grade suitable for construction. Even though Lime Stabilisation is used extensively in the UK, it is not commonly used in Ireland. However, Vision would have used this Soil stabilisation technique during the site enablement works prior to the construction of Mahon Point Shopping Centre in Cork. The lime's reaction with the soil is two-fold. It firstly binds fine clay particles into coarse, friable particles by a base exchange with the lime displacing sodium or hydrogen ions with a subsequent de-watering of the clay. Secondly, the lime raises the pH of the soil which encourages chemical reactions that lead to the formation of calcium silicates, which binds the soil particles thus increasing the bearing capacity of the soil. Prior to commencing the operations on site, extensive sampling of the soils were taken and assessed for the % lime necessary to achieve the desired bearing capacity. CBR values of 50 have been achieved throughout the site which substantially exceed the Design CBR value of 20. The design base layer CBR value was 8.

KEY FEATURES
- Saved substantial time & costs in substantially reducing materials off-site.
- Comprehensive CBR testing to ensure that the bearing capacity of the entire site was fully captured and recorded.
- Knowing that the shear strength of the soil will continue to improve long after construction has concluded on site.