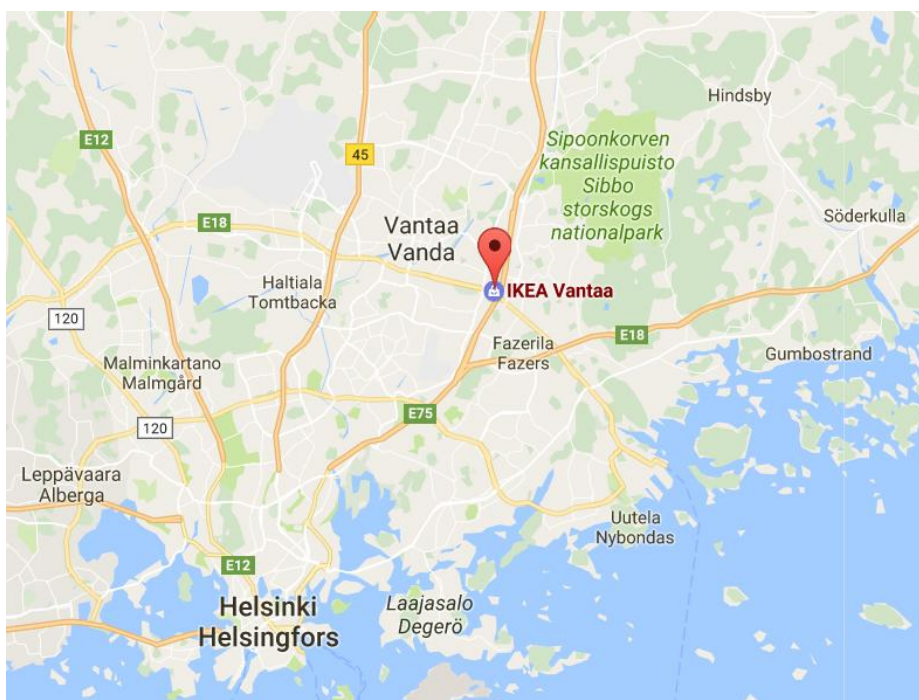


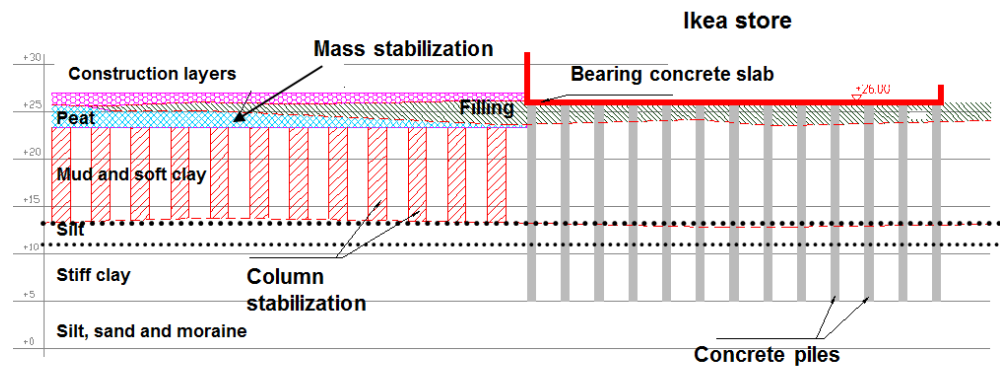
CASE IKEA VANTAA

IKEA VANTAA Vantaa, Finland Department store subgrade reinforcement	Key words: Subgrade reinforcement, field construction, deep stabilization
General information	The second department store of IKEA in Finland was chosen to be on swamp area between rocky hills. This area had previously been a landfill for secondary soil materials and construction waste. Also, it includes part of foundation for an old highway. However, the logistical location was more important than the construction technical qualifications.
Advantages of stabilization	The department store could be built on a logistically important area with extremely difficult subsoil conditions. Despite the difficult conditions the work was completed successfully and ahead of the time schedule with mass and column stabilization techniques.
Project timetable	Test stabilization in March 2002, stabilization of yards and driveways in April 2002-February 2003
Volumes and dimensions	Mass stabilization 65000 m³, column stabilization 110 km.
Geology and stabilized material	Diverse compressible and soft soil layers between 5 and 13 meters e.g.: peat (w = 50 – 500 %), mud (w = 70 – 290 %), clay from -1 ... -3 meters and below (w = 40 -140 %) and silty mid layer (w < 50 %). Under the clay layer at -9 meters there is silt / sand and finally glacial till down to -30 meters. The ground water level has varied at the depth of 1 – 1.5 meters from the ground surface.
Target strength of the stabilized material	Measured shear strengths: columns 90 kPa and mass stabilization 40 kPa after 30 days
Binder(s)	Mass stabilization: Cement; 100 kg/m³ Column stabilization: Finnstabi® + lime + cement; 90 kg/m³ (Nordkalk FTC)
Laboratory and field tests	Binder testing in laboratory, test soundings and drillings on the site. Stabilization design strengths were obtained well on the site.
Other	-
Long-term follow-up and lessons learned	The settlements of the stabilized area during usage have been insignificantly small (<50 mm).
Sources	Koivisto, K., Forsman, J., Leppänen M. (2004), <i>Column and Mass Stabilisation of the Yards of IKEA in Vantaa, Finland</i>, Proceeding in 14th Nordic Geotechnical Meeting. Ystad, Sweden.
Stabilization contractor	YIT



CASE IKEA VANTAA

Soil conditions in the project area



Foundation works ongoing



Ready IKEA department store and parking lot

