Somsak Lersprasertpun 2006: Improvement of Soft Bangkok Clay Foundation Using Solar Heat Energy. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Assistant Professor Suttisak Soralump, Ph.D. 143 pages.
ISBN 974-16-2423-9

This research intended to use solar energy to improve the soft Bangkok clay which naturally has low shear strength and high compressibility. The field test has been done by pumping the hot water through copper tube into the soft clay layer at the depth of 5 meter. The hot water was produced by solar heater. Furthermore, instruments have been installed in order to monitor the behavior of soil surrounding the heat source. The data of the changing in soil temperature, excess pore water pressure, volume changed and heat transmission have been collected. Finally, the soil samples have been collected from the heated and unheated area at various depths.

The testing results found that the temperature and excess pore water pressure decreased with the distance from the heat source, as expected. Furthermore, when the soil heating kept constant at extended time, the results show the temperature and excess pore water pressure drop as time goes by. The analysis of the results has been done and found that the increasing of temperature at initial stage, the temperature of soil farther from the heat source is remain at initial temperature, made the excess pore pressure near and farther from the heat source increase. Finally, the void ratio of improved soil tend to be decreased by 3-9% and the shear strength of soil tend to be increased by 30-70%

_____ _____ ___/___/___

Student's signature Thesis Advisor's signature