Example 1

Determine the net ultimate bearing capacity of a 10m ×15m mat located 2 m below ground in a saturated clay with c_u = 100 kPa.

Example 2

A 4' thick mat foundation is 125'×220' in plan area. It carries a DL = 40,000 kips and LL = 25,000 kips. Mat is placed in a soft clay with q_u = 700 psf and γ = 114 pcf.

Determine:

a. D_F for a fully compensated foundation.

b(i). D_F for FS = 3

b(ii). What will be the FS if the total load is increased by 50 %.