Name_____ Student number_____

Assignment 4

Consider building model on pages 7-9 of the lecture notes. Model the columns as massless bending beams, floors as massless rigid bodies, and assume that the floors move vertically in the $XZ-$plane. Find the vertical displacement u of the loading point as function of the weight F on the loading tray and thereby the effective stiffness (spring coefficient) k of the structure defined by $F = ku$. Use the displacement-force relationship for a typical column shown to deduce the displacement of the second floor.