week 6

QUESTION 1 considering the same example you solved in the previous assignment (radiative heat transfer between two parallel plates), how many shields with epsilon = 0.1 should you add in order to have the new heat transfer rate to be 1% of the case without shields ?

11-2 no shields = $5.67*10^{-8}* (800^4-500^4)/(1/0.2+1/0.7-1)=3625.4\ W/m^2$

when the heat transfer =1%

q1-2= 36.25 W/m^2

when Σ1=0.1

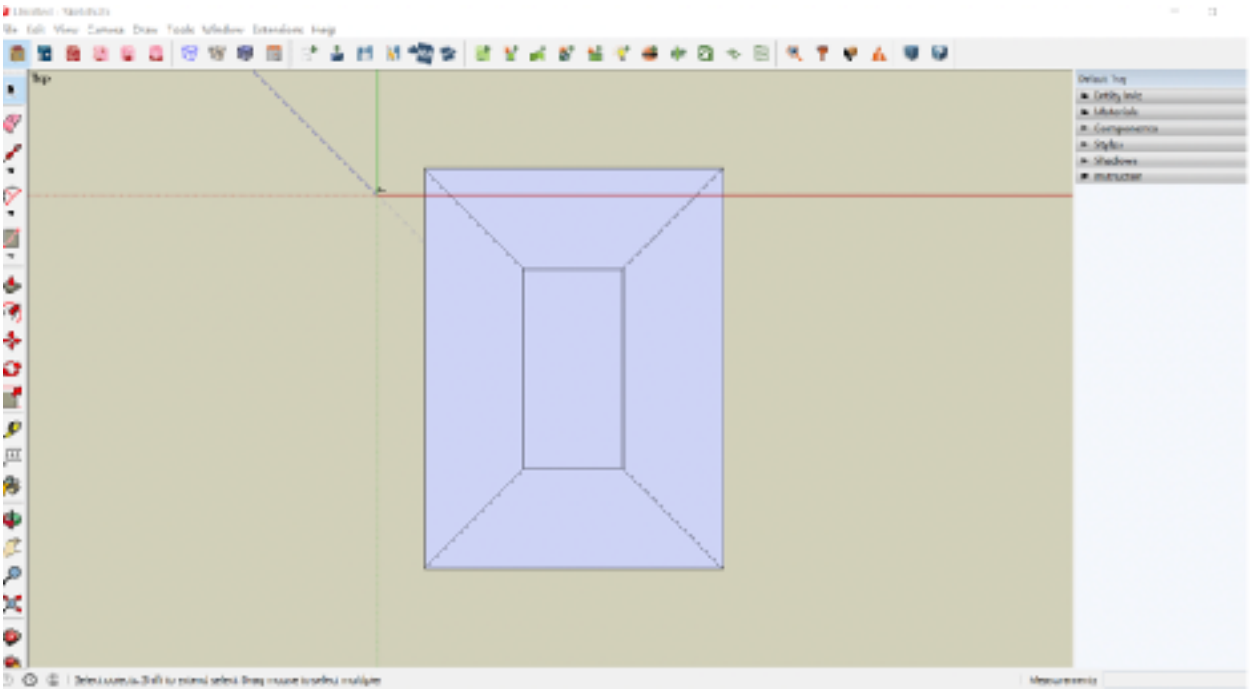
q1-2 with N shields = (N+1) * q1-2 single shield

N=27.5

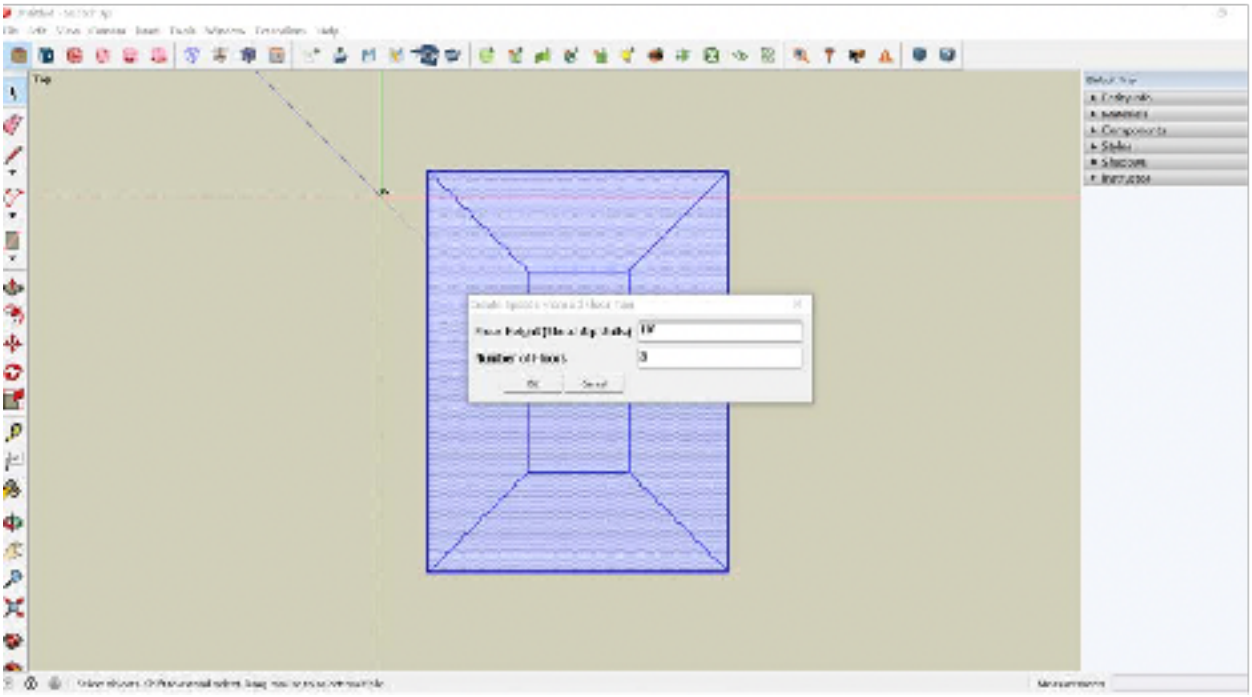
so 28 shields will be needed to achieve the 1% heat transfer

QUESTION 2

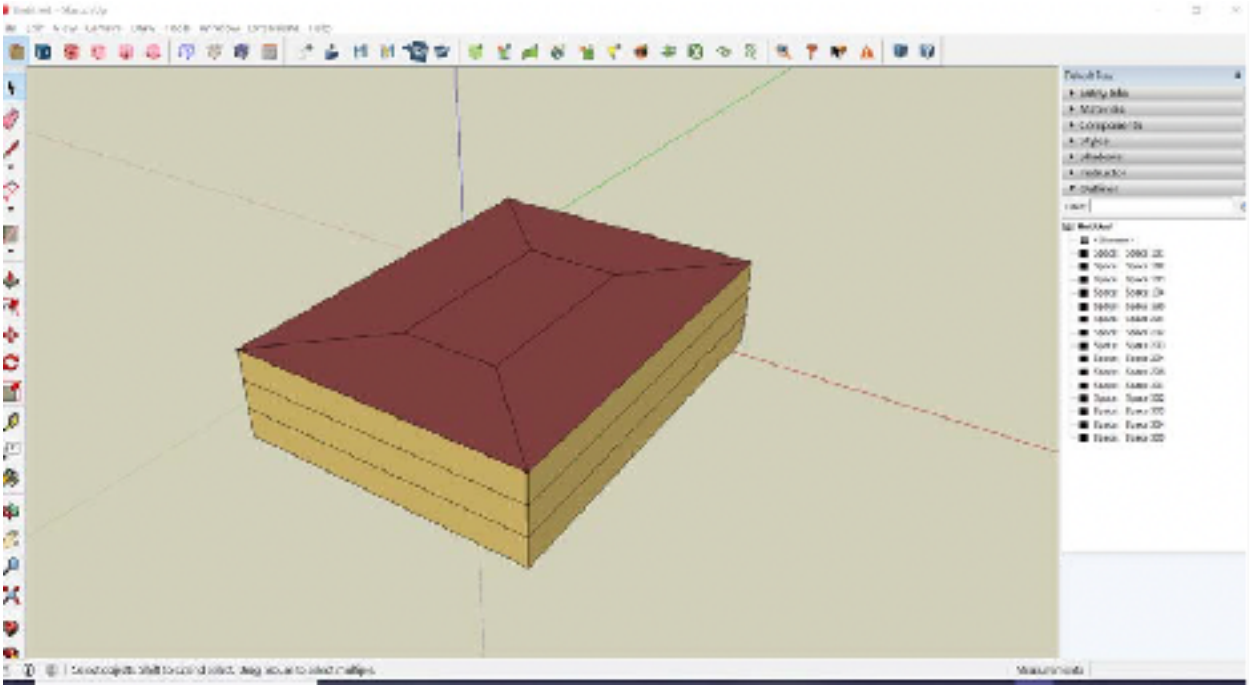
1.Create a 40m*30m rectangle



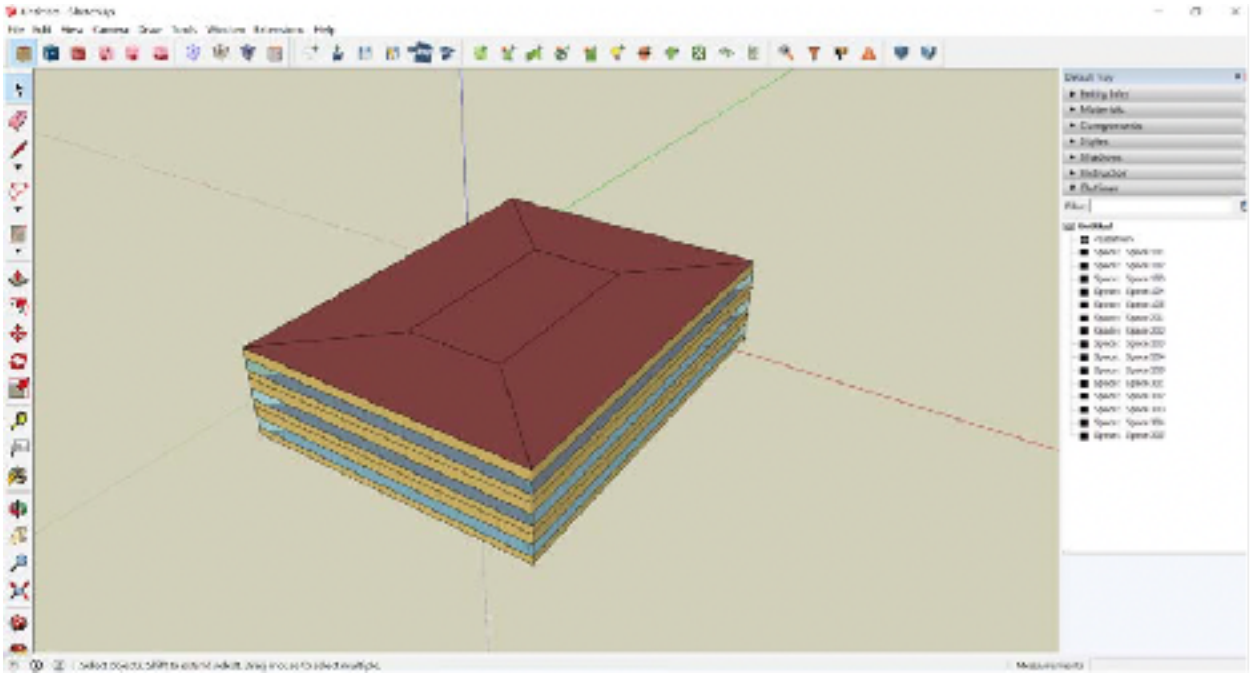
2.create spaces from diagram



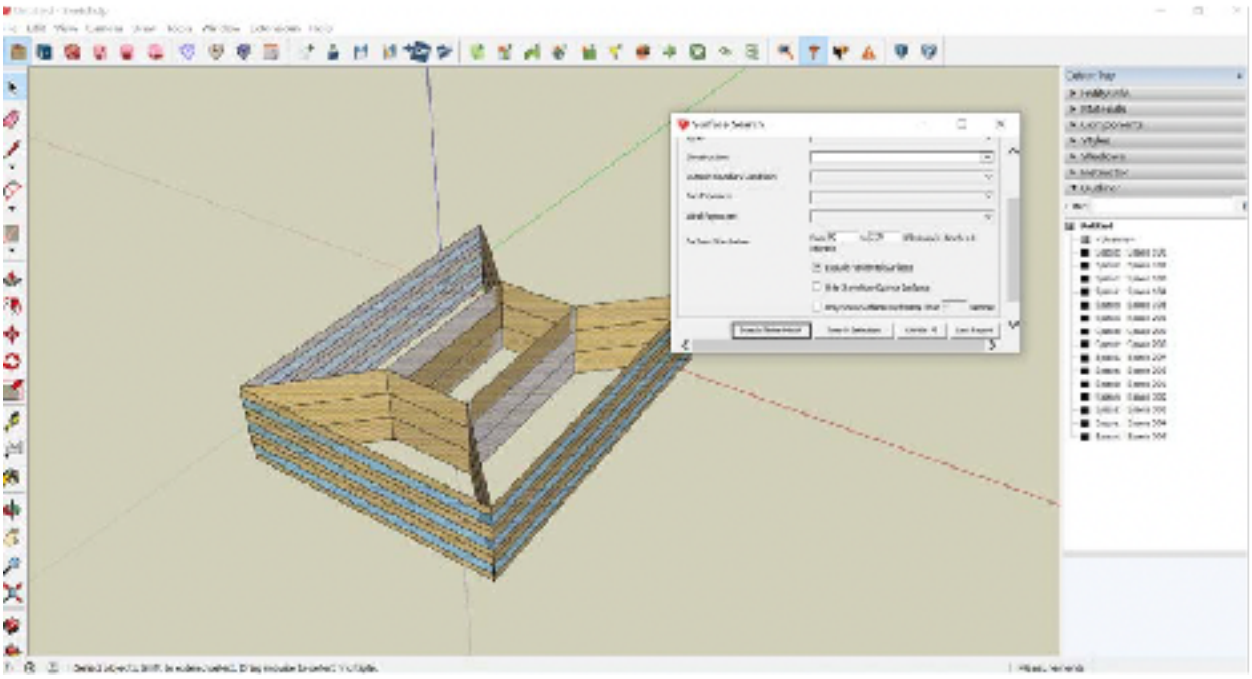
3.surfaces matching



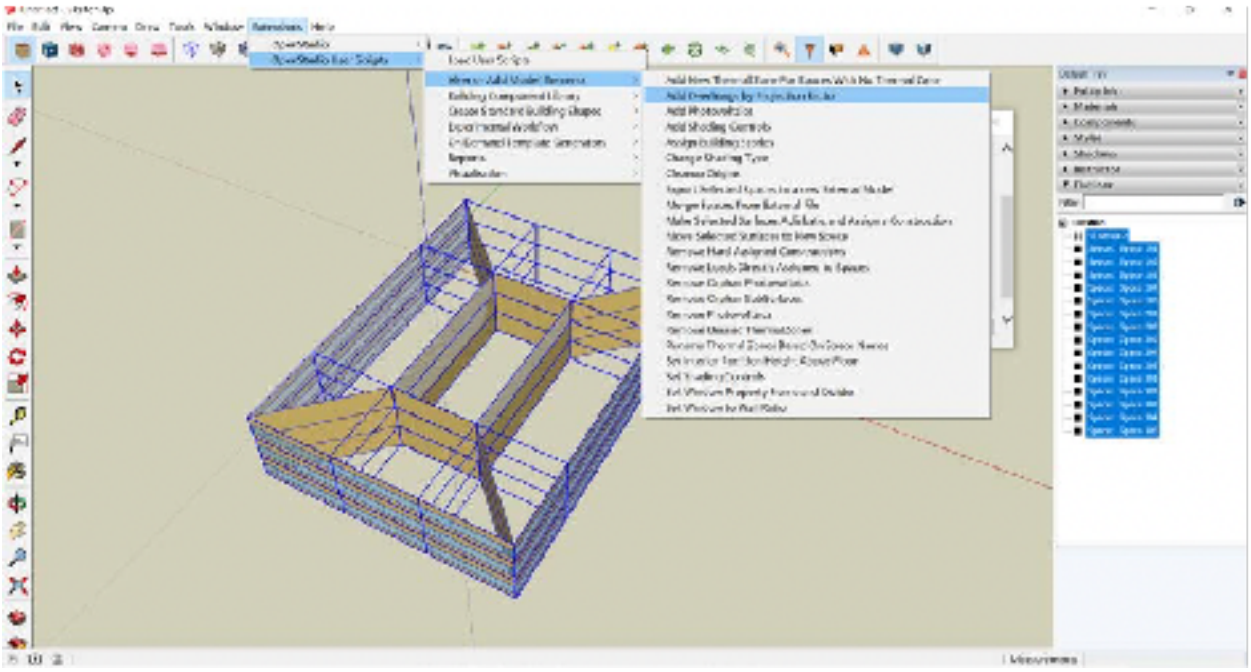
4.install the windows



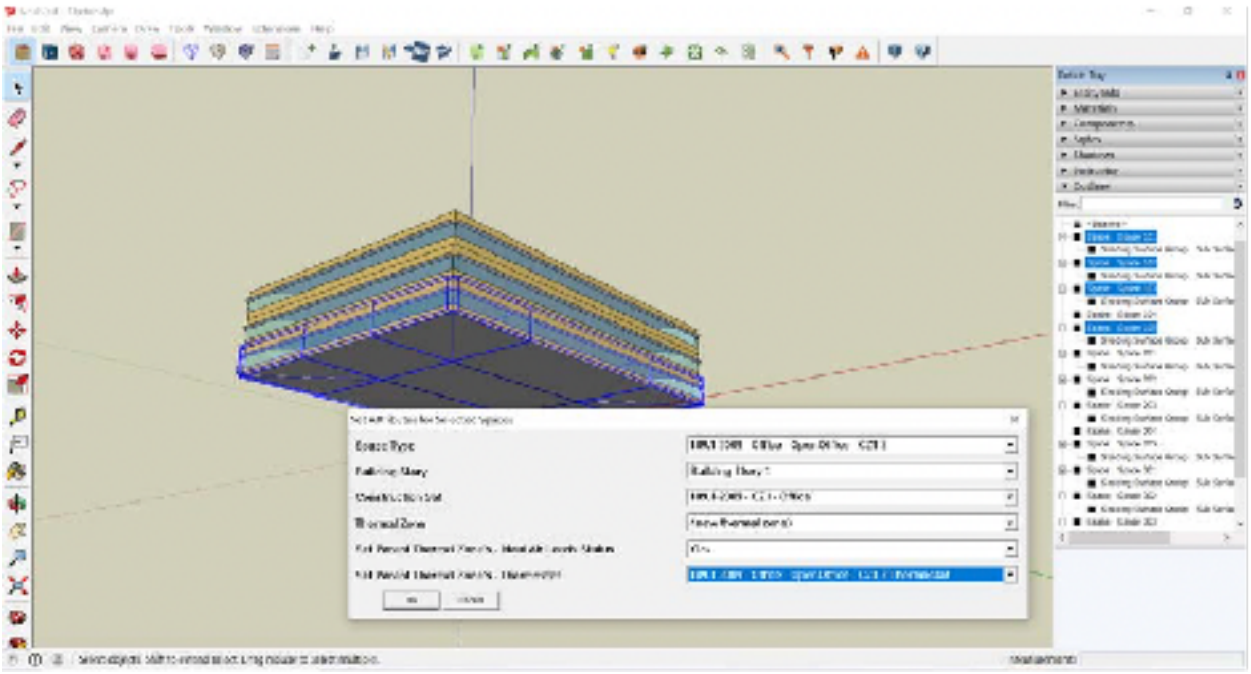
5. search surfaces



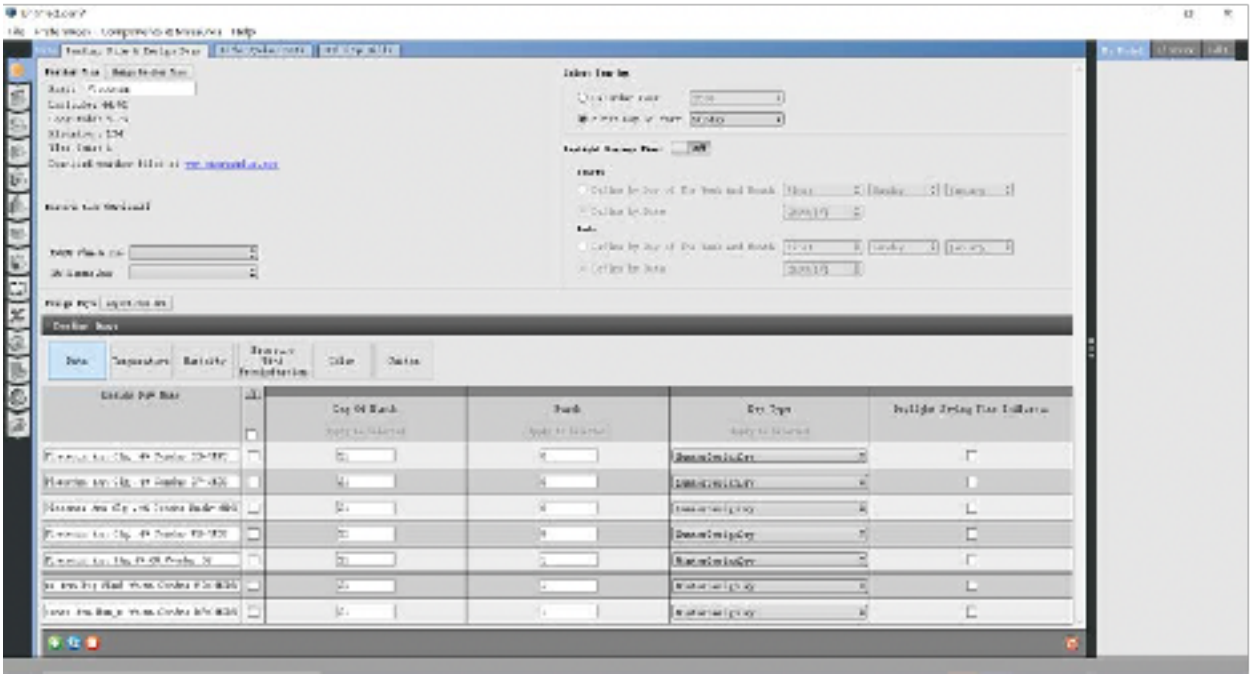
6.add the external shading



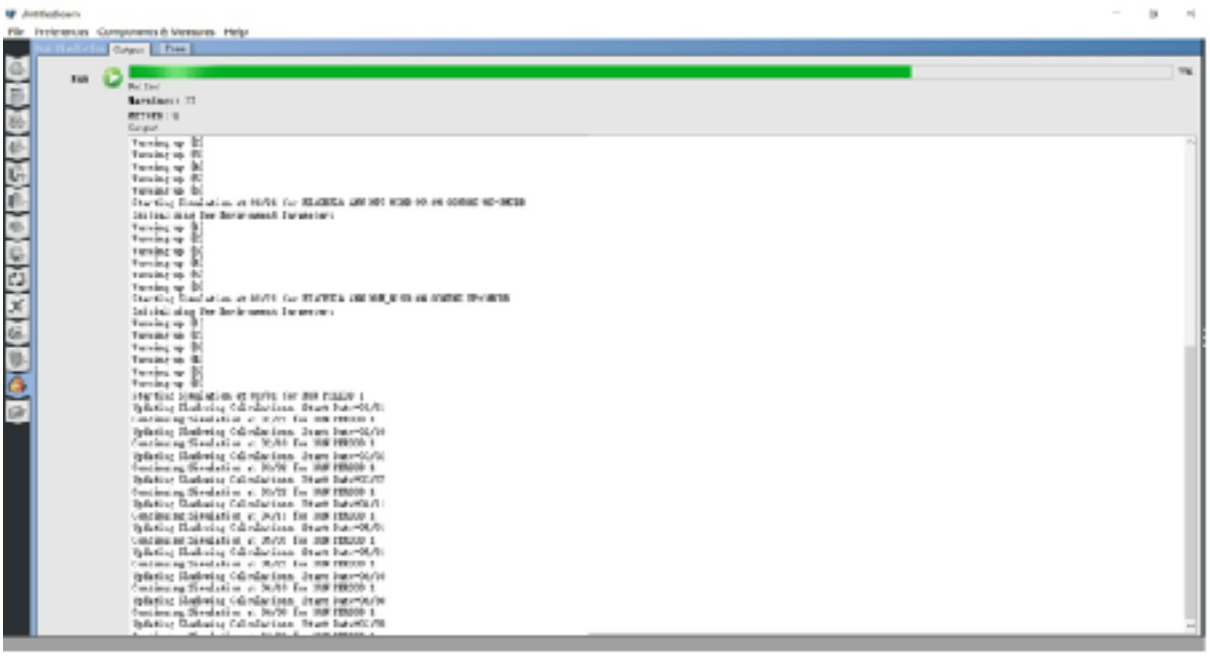
7.Set attributes for selected spaces



8.Launch OpenStudio
add weather file



9.run the analysis



10. see the result