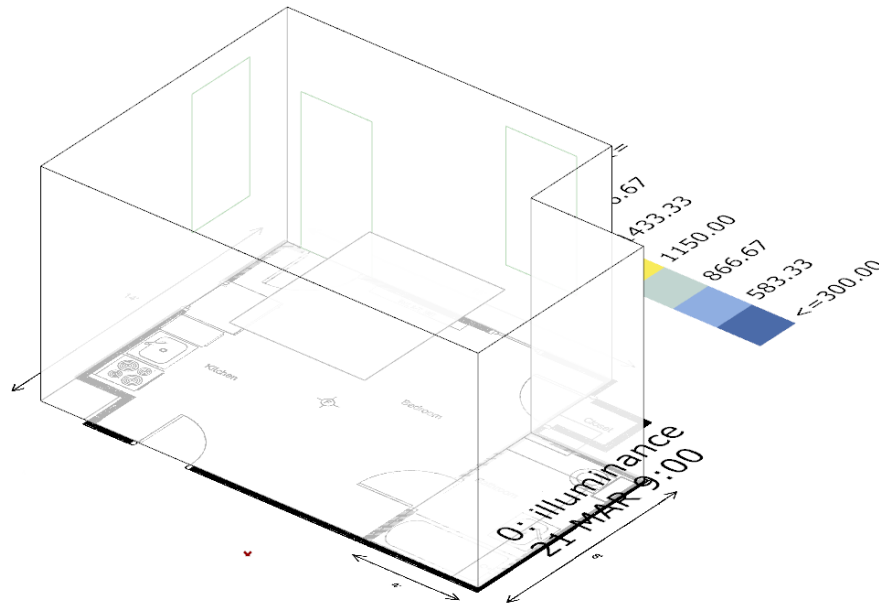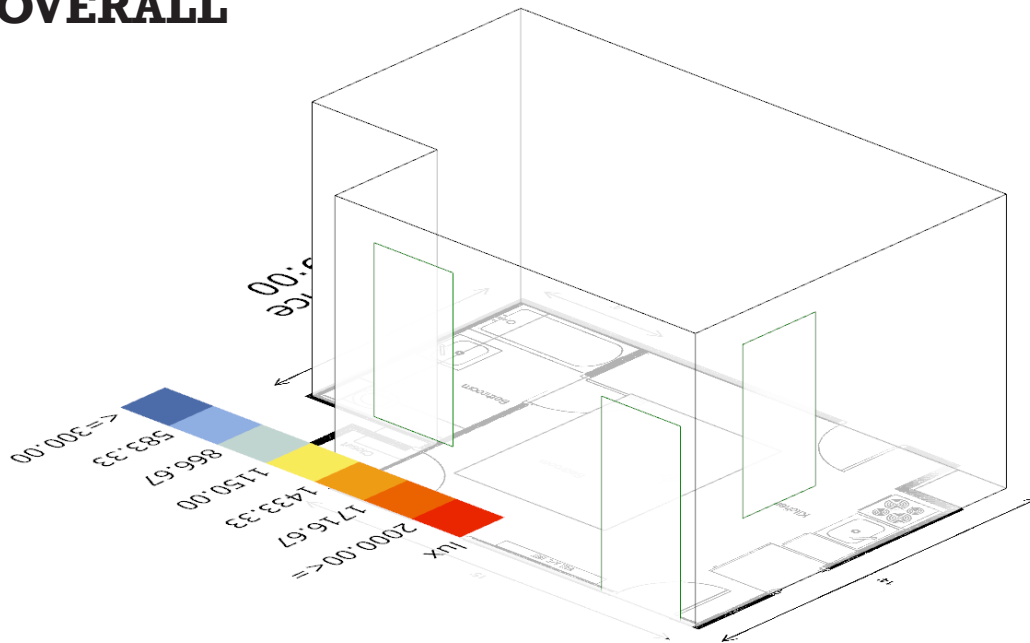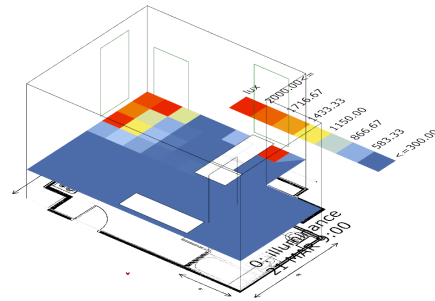# POINT IN TIME DAYLIGHT ANALYSIS

Jieming Jin | M.Arch 2015 Candidate
Arch 753 Building Performance Simulation
Instructor: Mostapha S. Roudsari
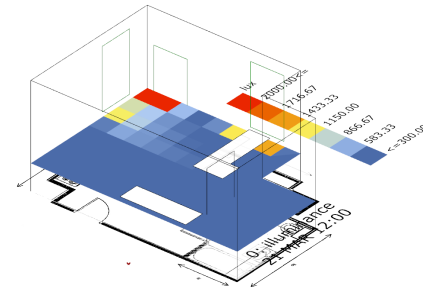University of Pennsylvania
School of Design

OVERALL

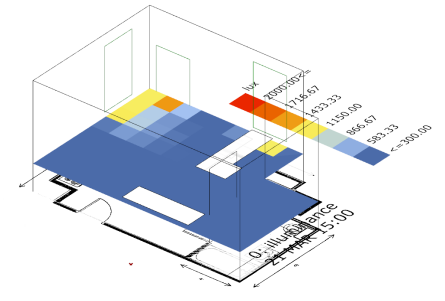My apartment has only two windows and one door. This makes my apartment very cold in winter. Also in the apartment, the light is not very sufficient.

CURRENT SITUATION

9am Mar 21

12pm Mar 21
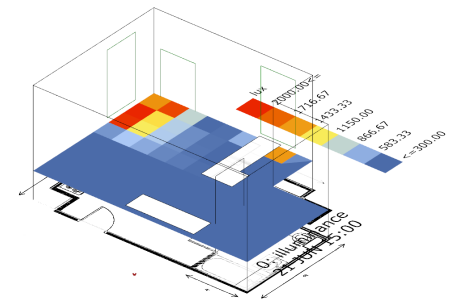
15pm Mar 21

For now, the daylight analysis show that the interior sunshine environment is insufficient. My first proposal is to make the windows' size bigger.

9am Jun 21

12pm Jun 21

15pm Jun 21
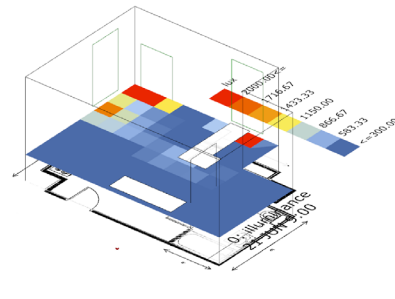
9am Dec 21

12pm Dec 21

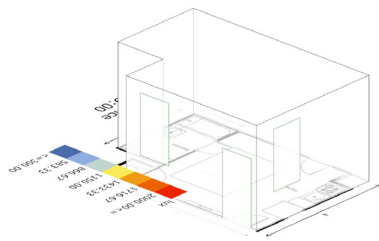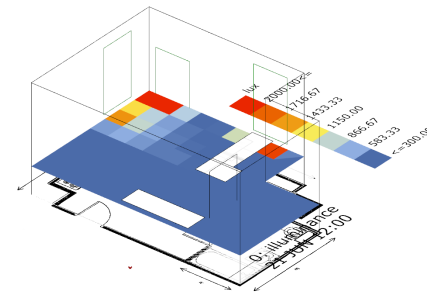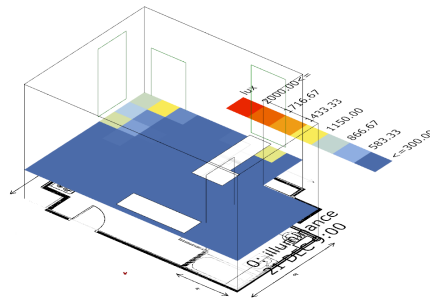15pm Dec 21

CHANGE NORTH WINDOW'S SIZE
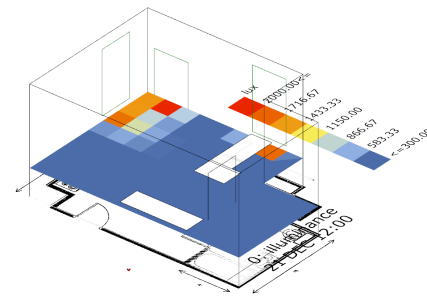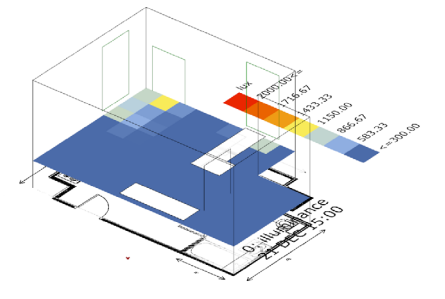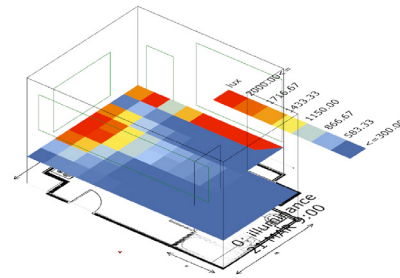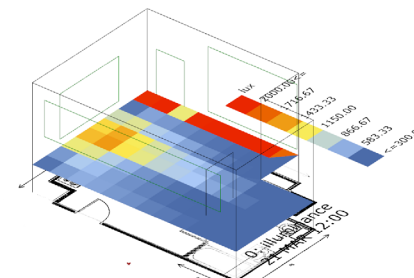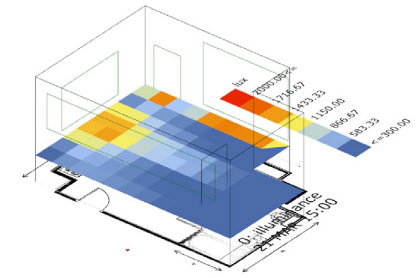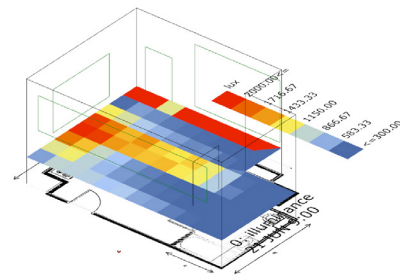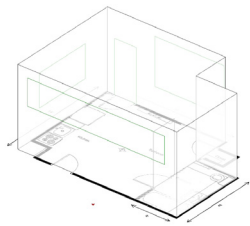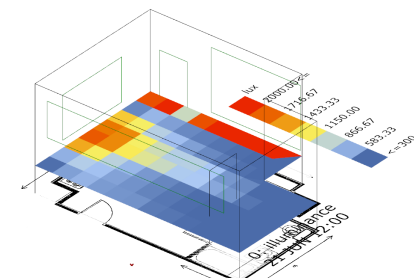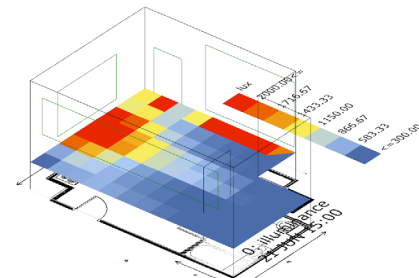

9am Mar 21

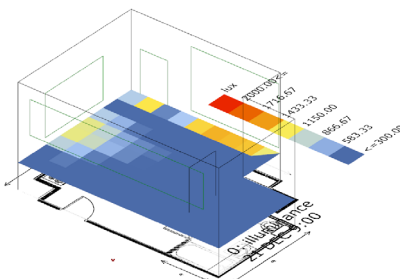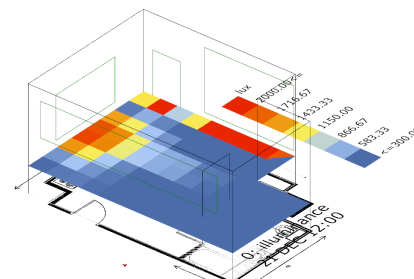12pm Mar 21

15pm Mar 21

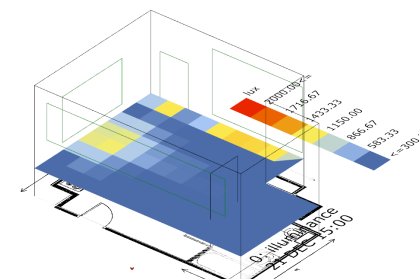9am Jun 21

12pm Jun 21

15pm Jun 21

After increasing the size of the north window, the daylight analysis shows that the interior light is getting better. I would like to keep increasing the size of the other windows.
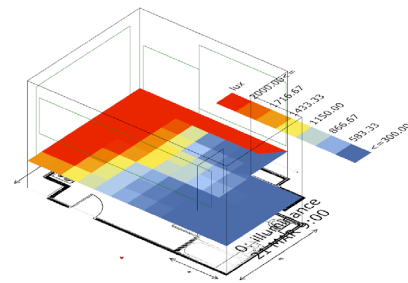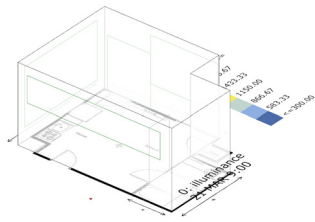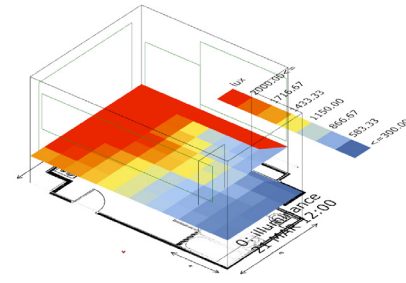

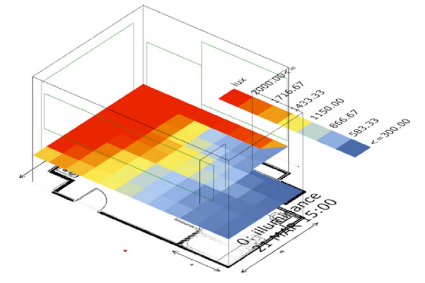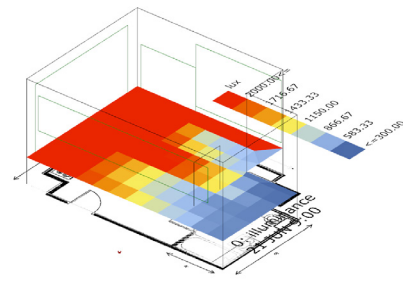9am Dec 21

12pm Dec 21

15pm Dec 21

OPEN NEW WINDOW AND CHANGE DOOR'S SIZE

9am Mar 21

12pm Mar 21

15pm Mar 21
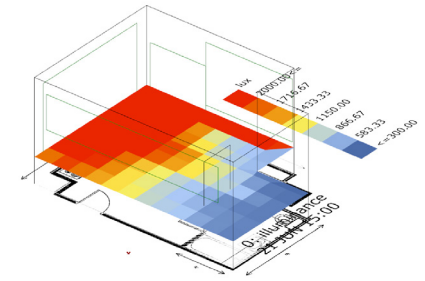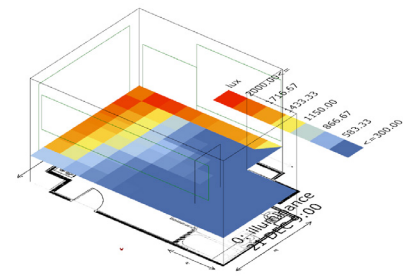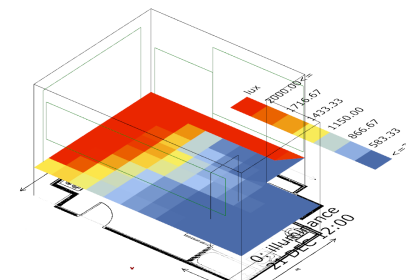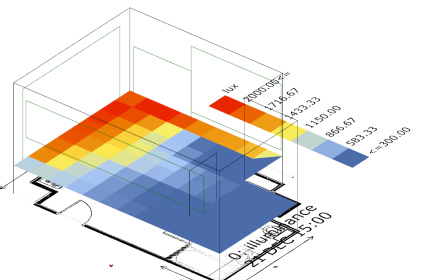
After increasing the size of the door and open it to make it as one of the window when analyzing it, the interior light environment gets better. Also I kept increasing the north window's size and the light now is more than 2000lux. The good thing is the very inside of my apartment get get some sunshine in March and June. I also opened a new window on the west wall, it faces to the corridor but not exterior. It helps a little.

9am Jun 21

12pm Jun 21

15pm Jun 21

9am Dec 21

12pm Dec 21

15pm Dec 21

Daylight Analysis | Jieming Jin

DECREASE THE NORTH WINDOW'S SIZE

According to the former analysis, the light is out of the boundary we set, 2000lux, so I decreased the north window's size. From the analysis now we can see that only in June the sunshine is too much. This range is acceptable for me.
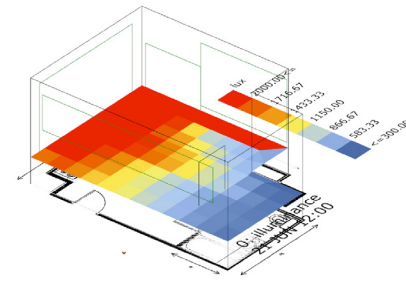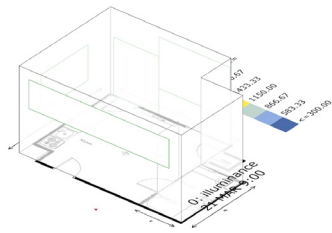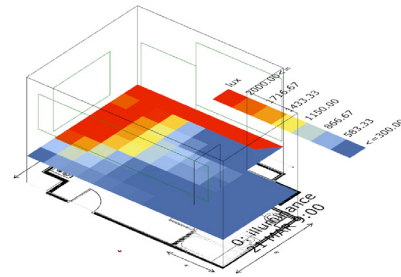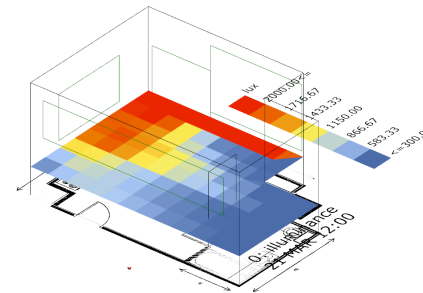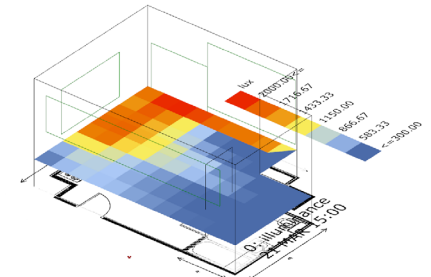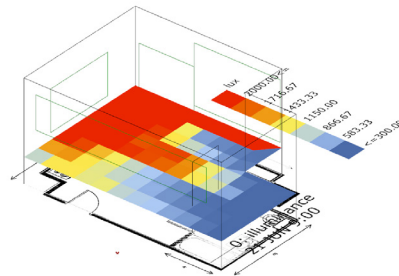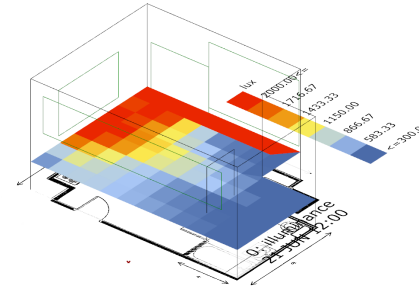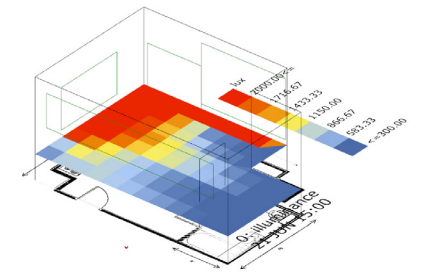

9am Mar 21

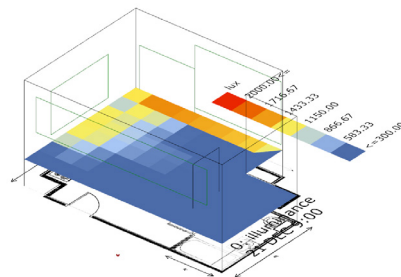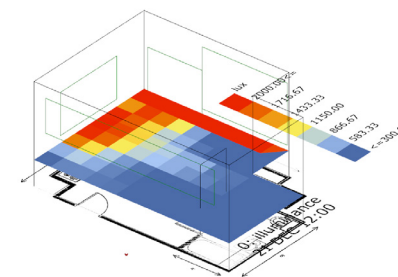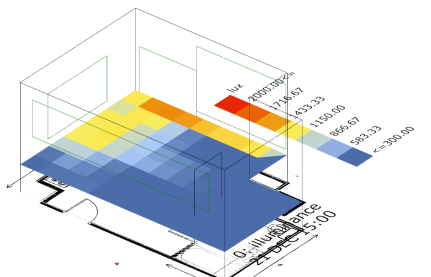12pm Mar 21

15pm Mar 21

9am Jun 21

12pm Jun 21

15pm Jun 21

9am Dec 21

12pm Dec 21

15pm Dec 21