DAYLIGHT ANALYSIS

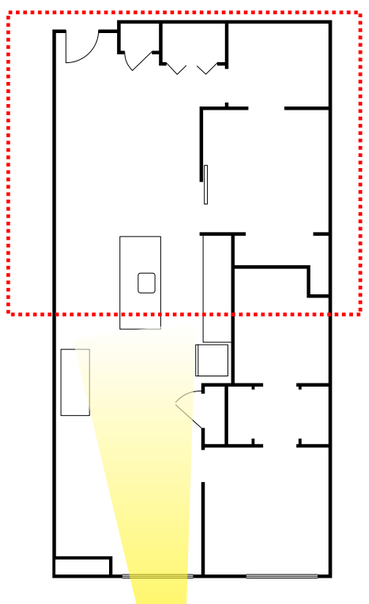
My apartment gets uneven daylight and because of this, there is a lot of light in the front of the apartment and not much light at the back of the apartment. There's also the problem of having a dark corner because of the HVAC system on the south-west side of the apartment next to the window.

The following is an analysis of the existing room configuration. After running these simulations I will look at the possible solution of adding a light shelf.

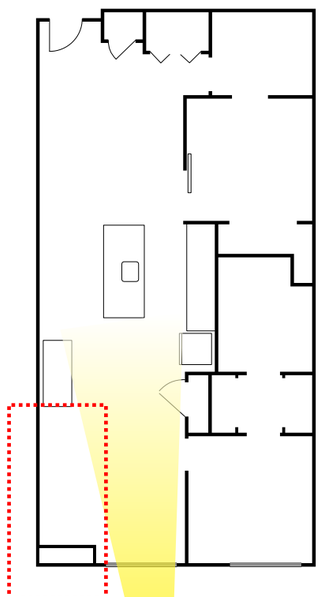
PROBLEM 1: Not enough light at the back of the apartment

PROBLEM 2: Dark corner

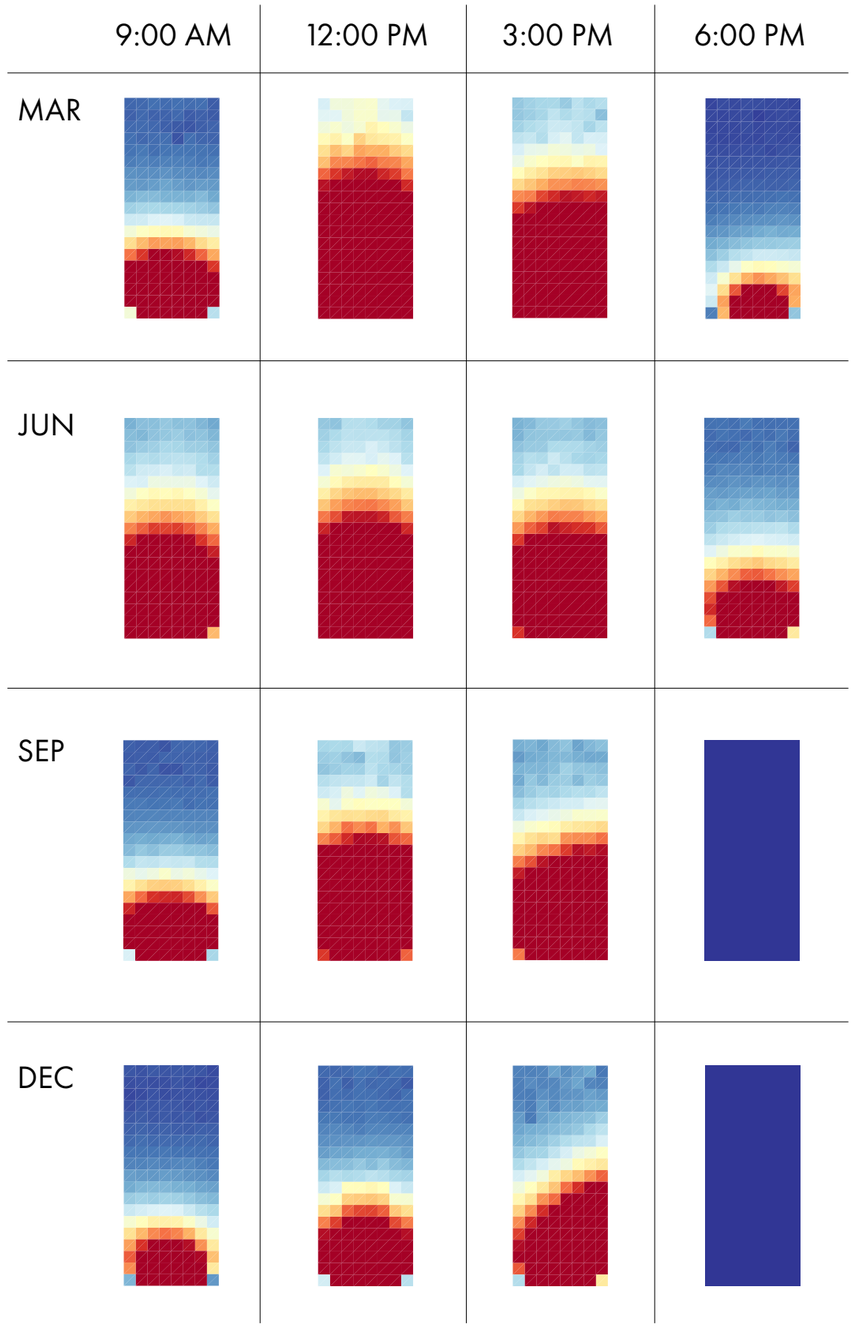
PROBLEM 1



PROBLEM 2

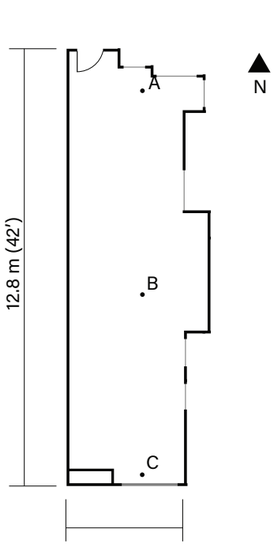


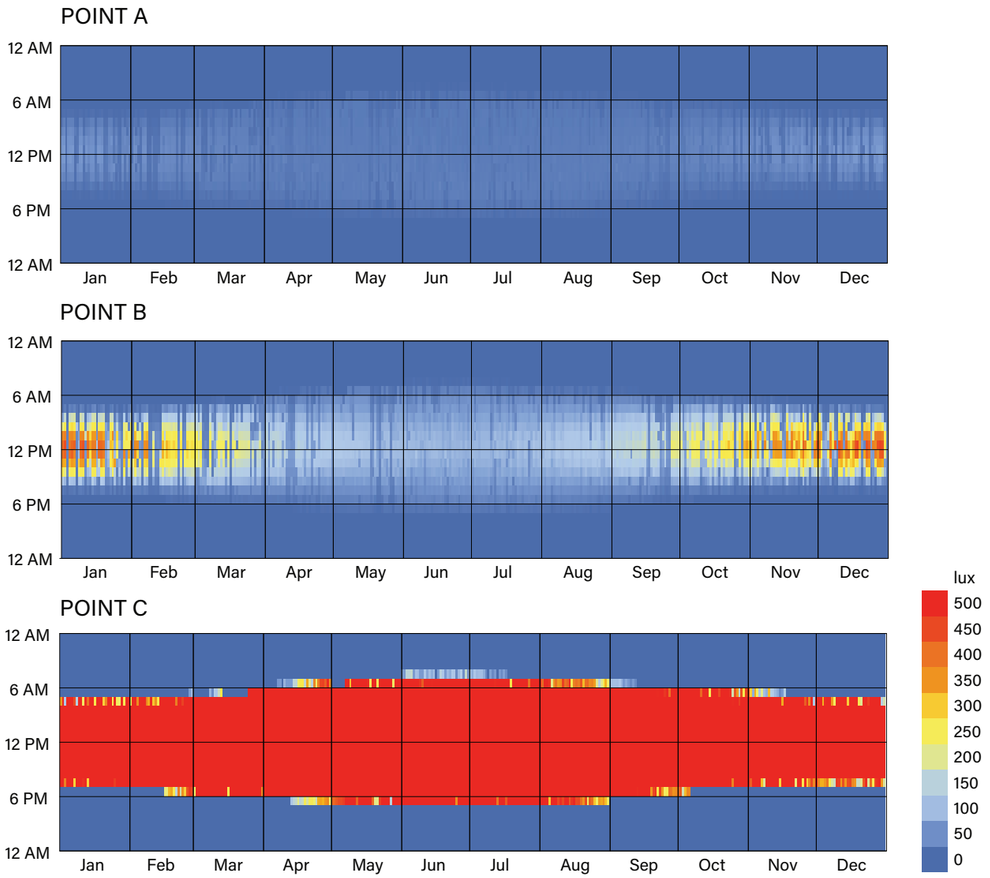
SEASONAL DAYLIGHT ANALYSIS - POINT IN TIME



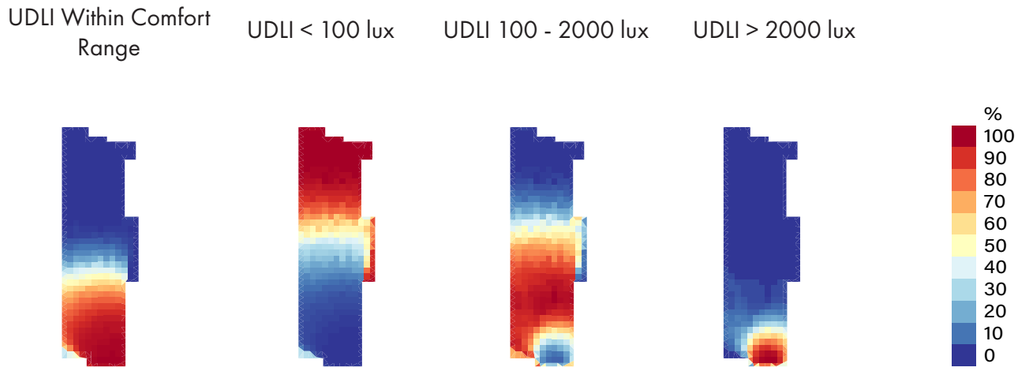
Daylight by point in room. By dividing the apartment into three points, we can further examine the uneven daylight at each location.

AVAILABLE DAYLIGHT PER POINT

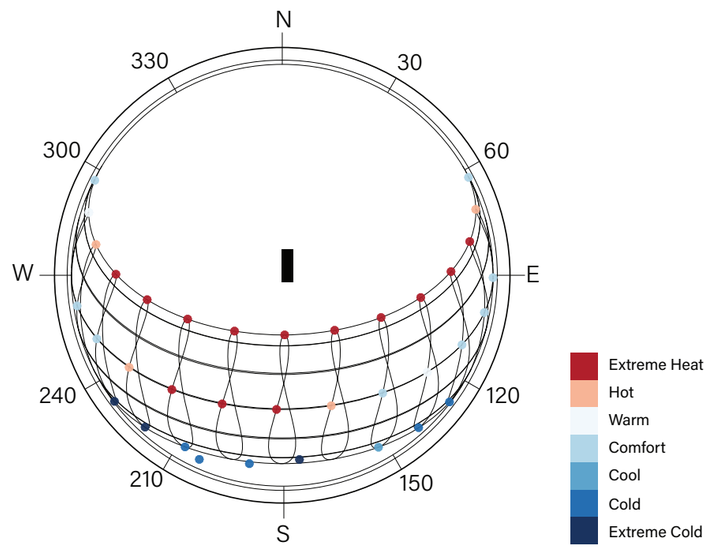




% of Useful Daylight. The diagrams below show light according to comfort and useful daylight.



The sunpath below shows the range of sun location according to comfort (daylight).



GLARE ANALYSIS BY SEASON

The Daylight Glare Probability (DGP) measures the amount of glare that the room receives at a particular location. Below are the ranges that define what is comfortable and what is not.

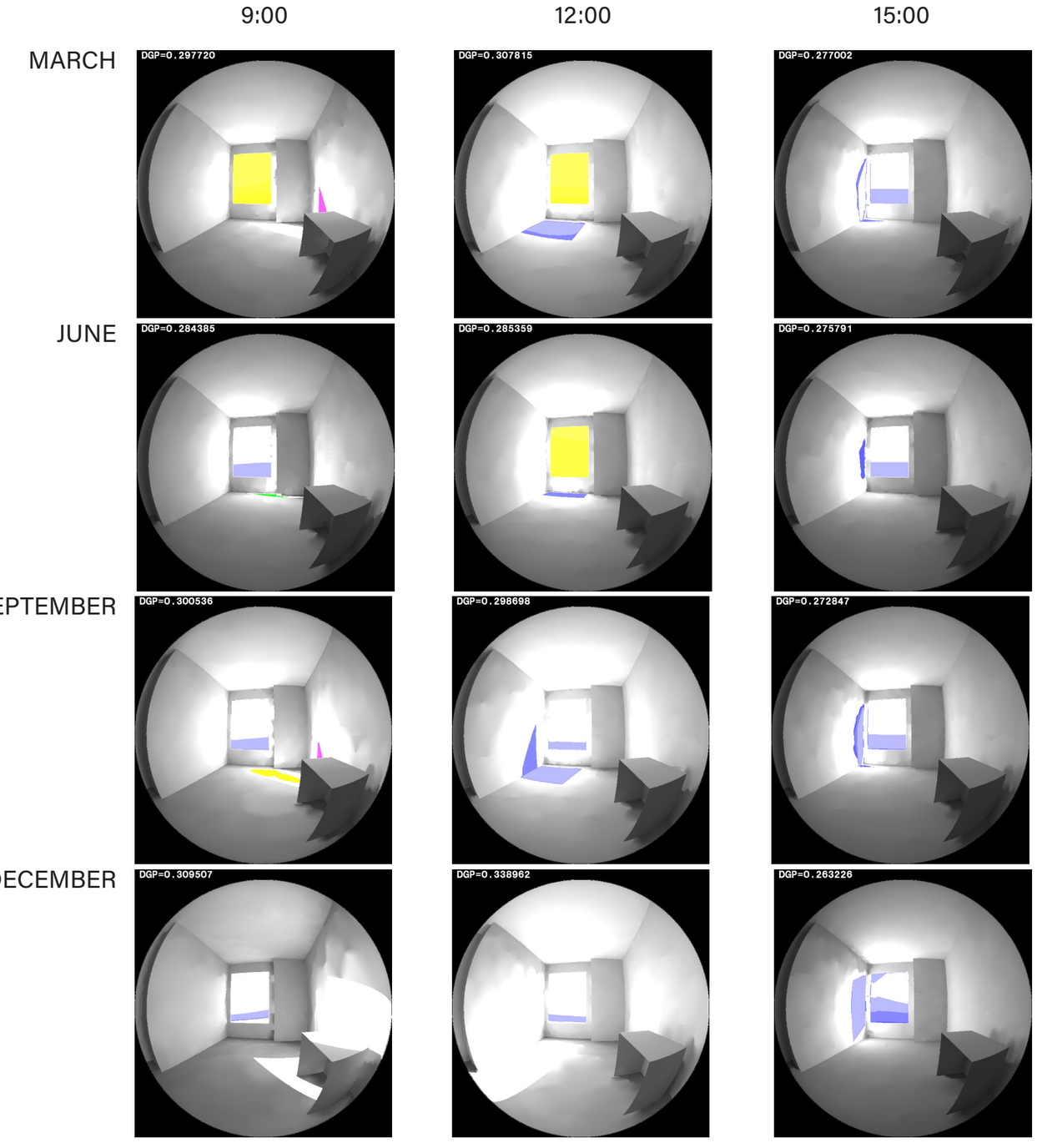
Imperceptible Glare: DGP < 0.35
Perceptible Glare: 0.40 > DGP > 0.35
Disturbing Glare: 0.45 > DGP > 0.40
Intolerable Glare: DGP > 0.45

MARCH
9:00 0.297720
12:00 0.307815
15:00 0.277002

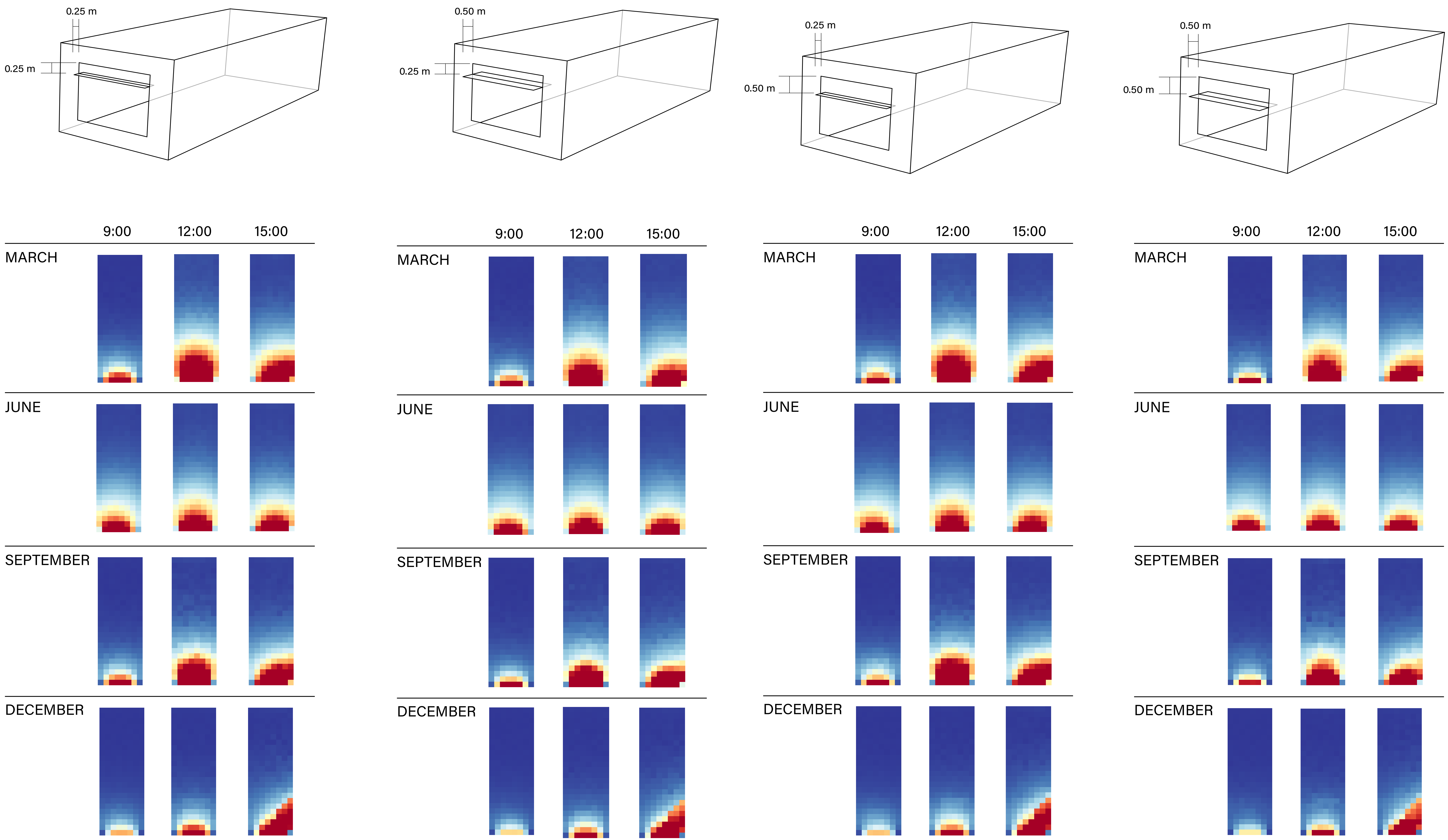
JUNE
9:00 0.284385
12:00 0.285359
15:00 0.275791

SEPTEMBER
9:00 0.300538
12:00 0.298898
15:00 0.272847

DECEMBER
9:00 0.309507
12:00 0.338902
15:00 0.263226



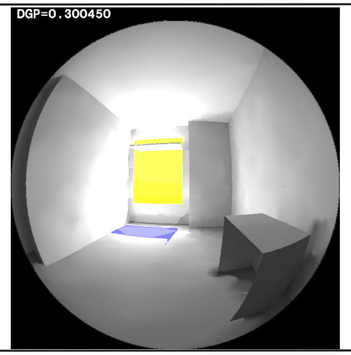
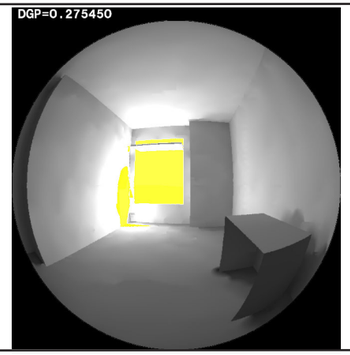
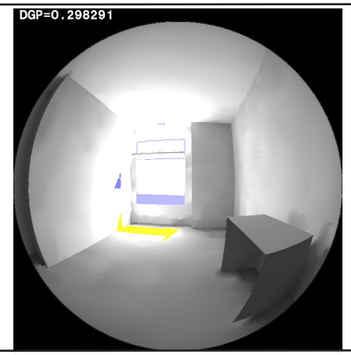
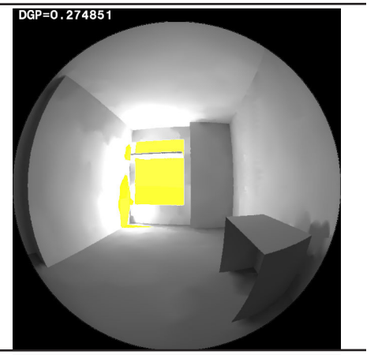
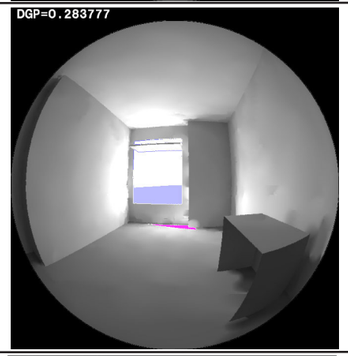
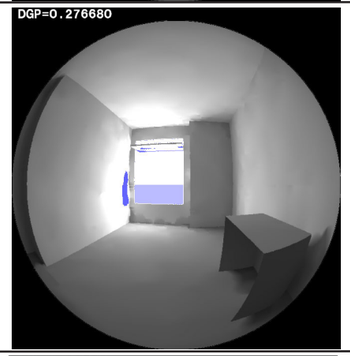
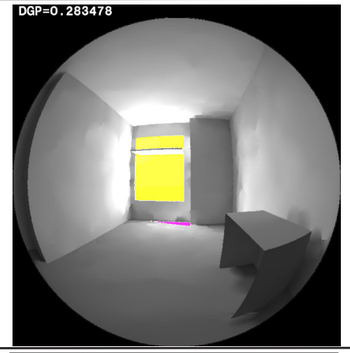
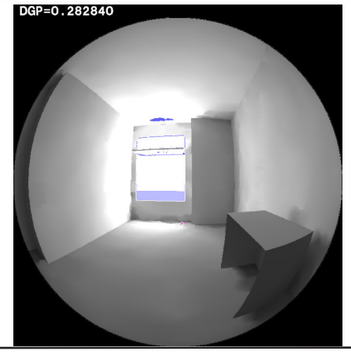
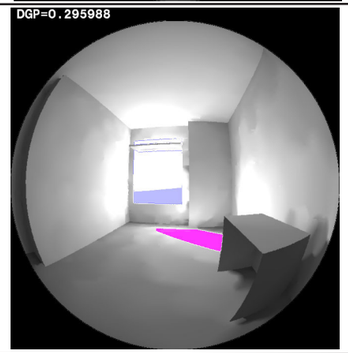
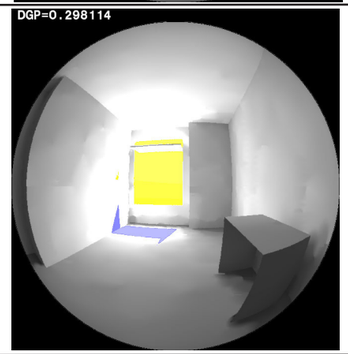
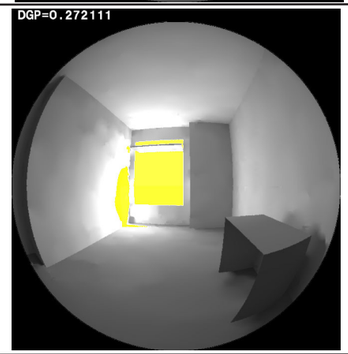
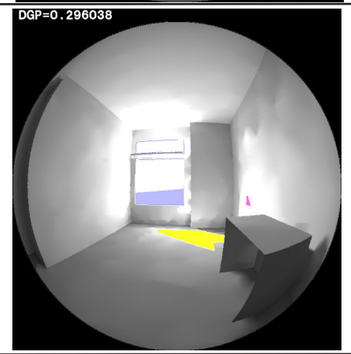
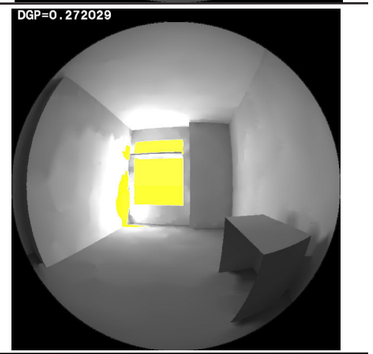
SHADE DESIGN ANALYSIS BY POINT-IN-TIME DAYLIGHT SIMULATIONS



SHADE DESIGN ANALYSIS BY GLARE SIMULATIONS

1 m wide x .25 m from top of window

1 m wide x .50 m from top of window

	9:00	12:00	15:00	9:00	12:00	15:00
MARCH						
JUNE						
SEPTEMBER						
DECEMBER