



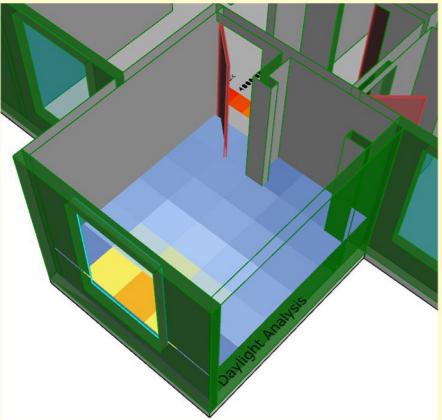
SHADING SYSTEM DESIGN

OKLAHOMA CITY, OKLAHOMA

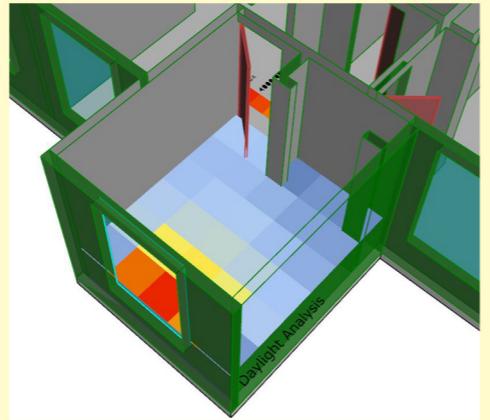
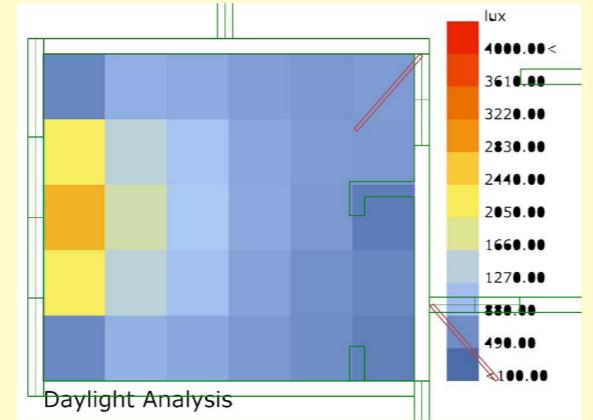
APARTMENT WITHOUT SHADING



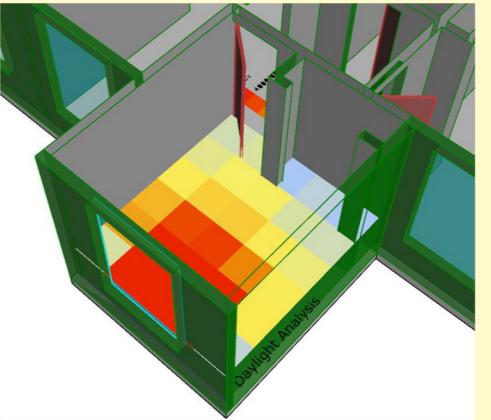
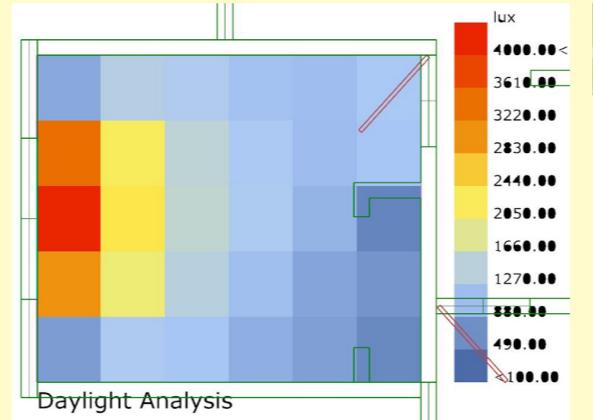
SUMMER
(JUNE 21)



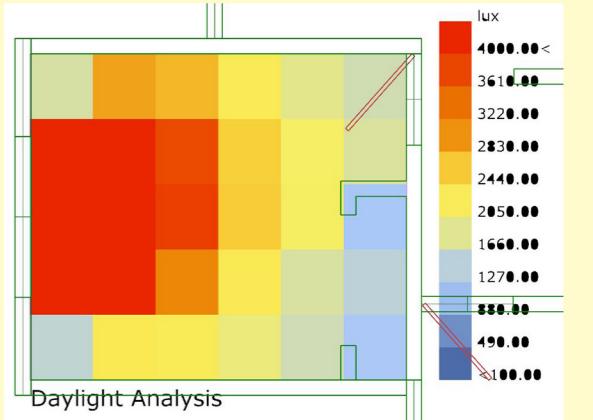
9:00 AM



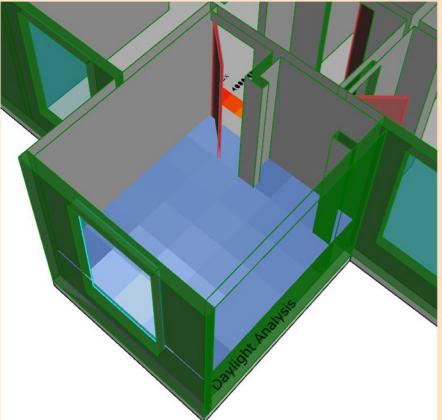
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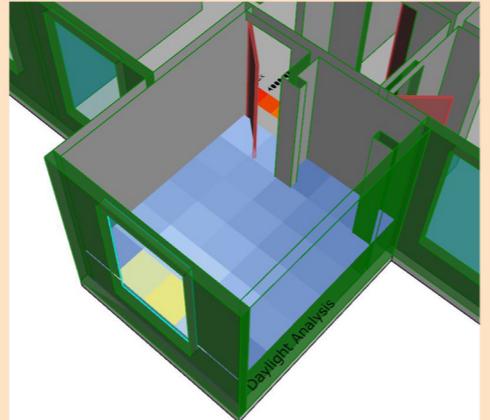
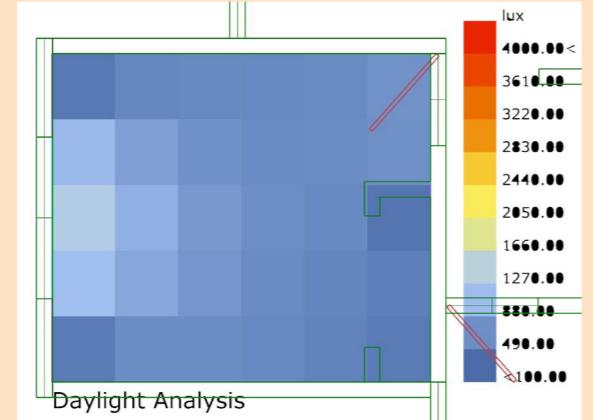
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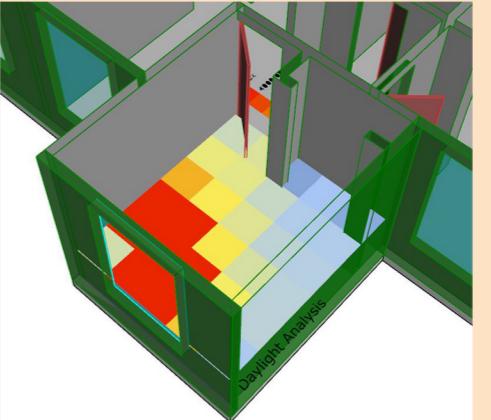
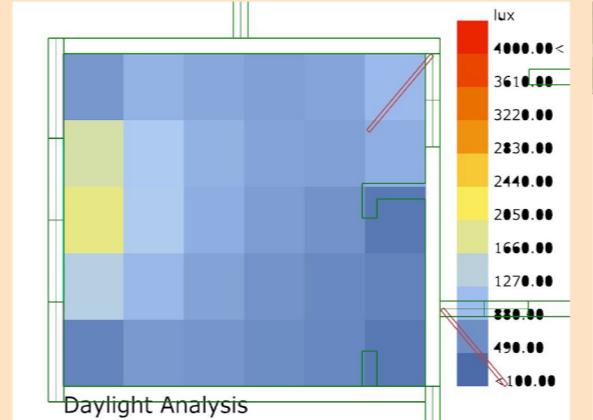
FALL
(SEPTEMBER 21)



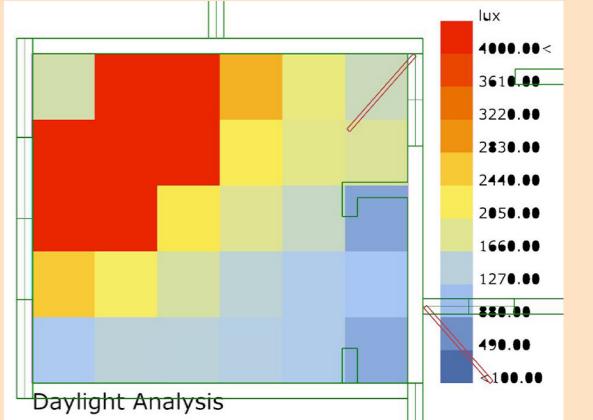
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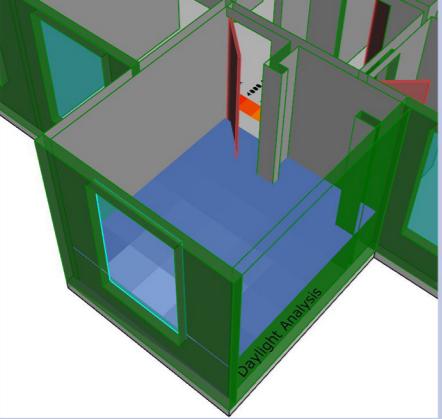
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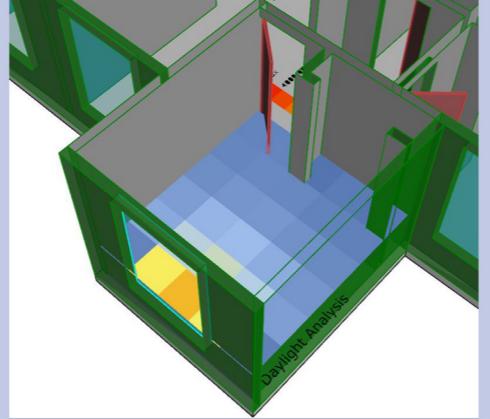
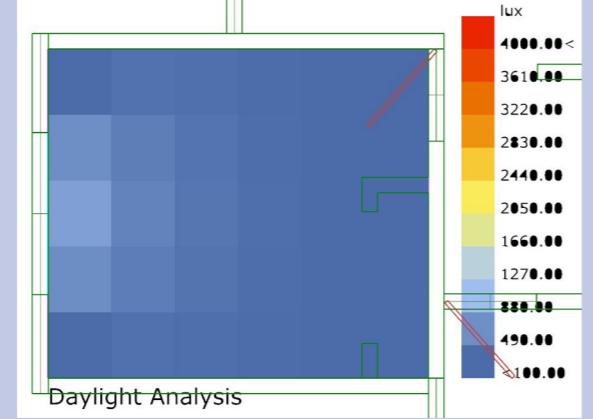
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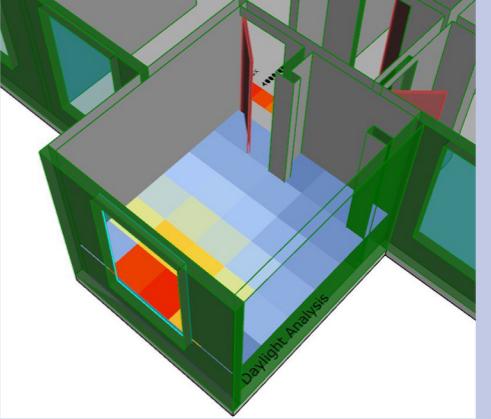
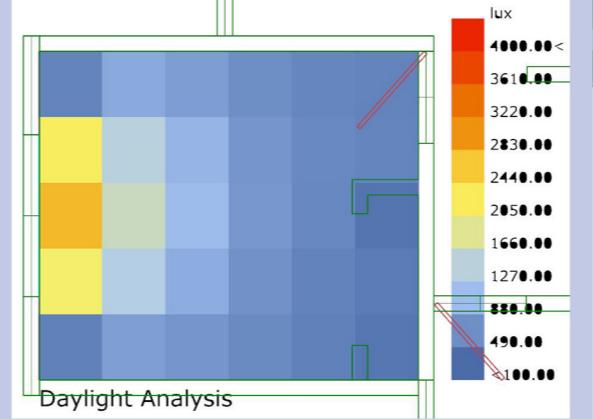
WINTER
(DECEMBER 21)



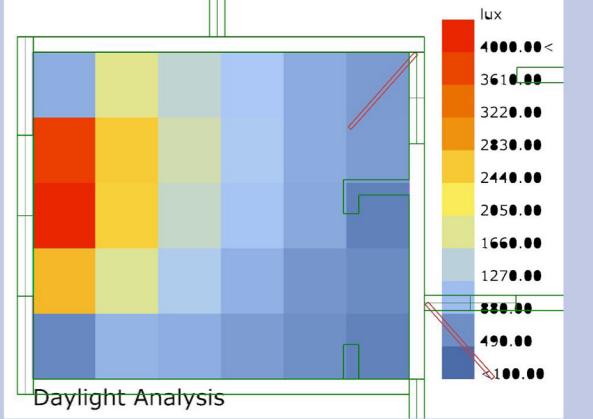
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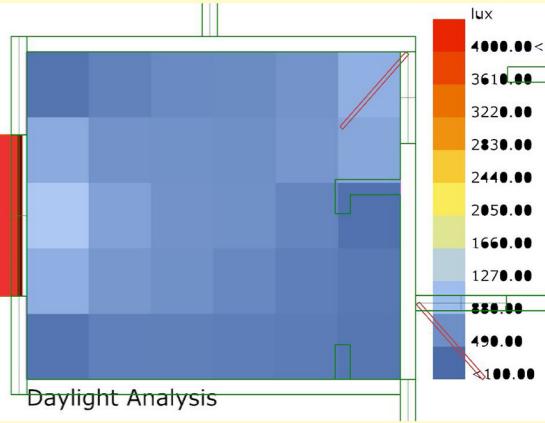
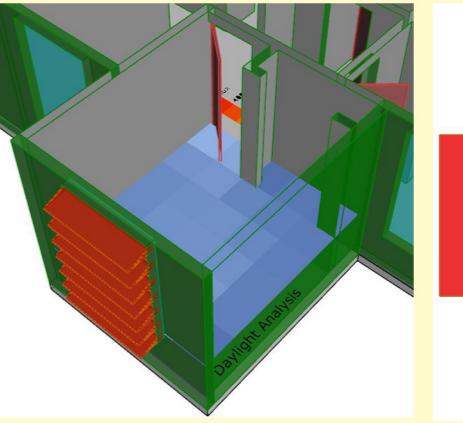
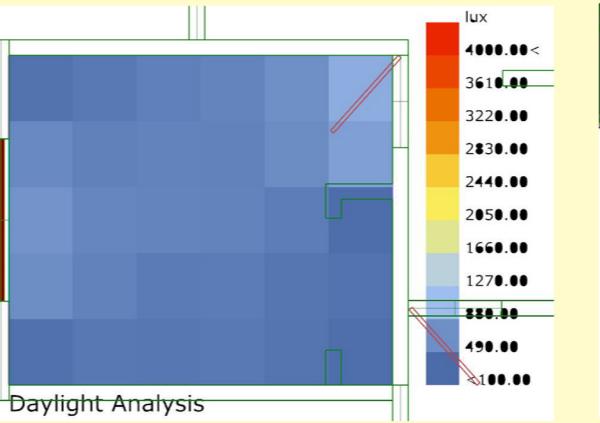
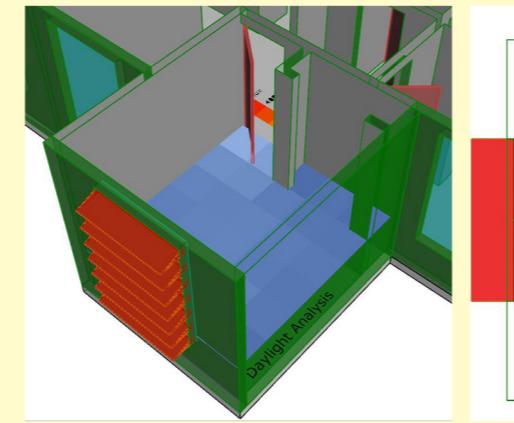
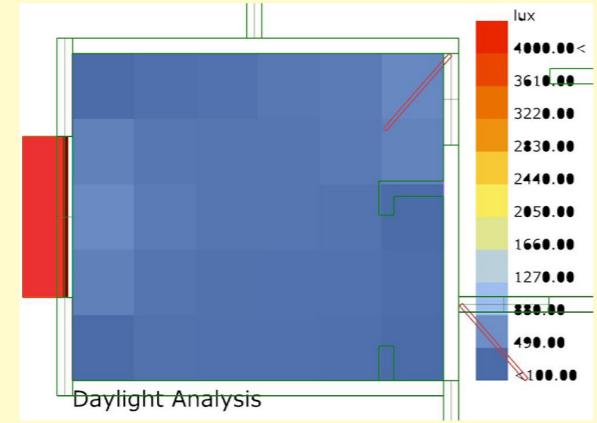
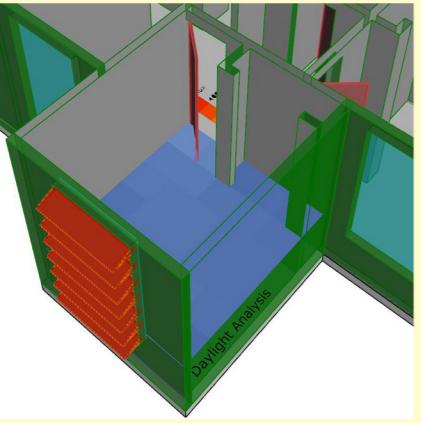


SHADING SYSTEM #1

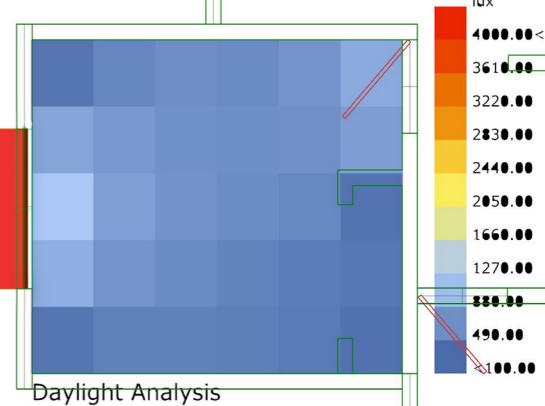
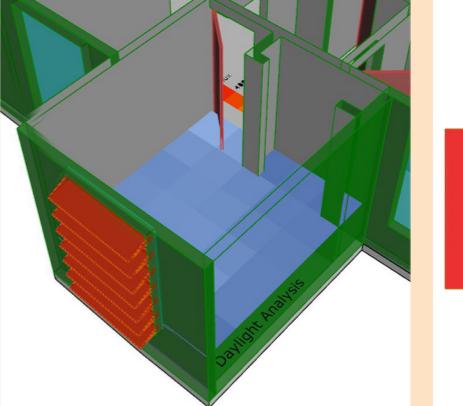
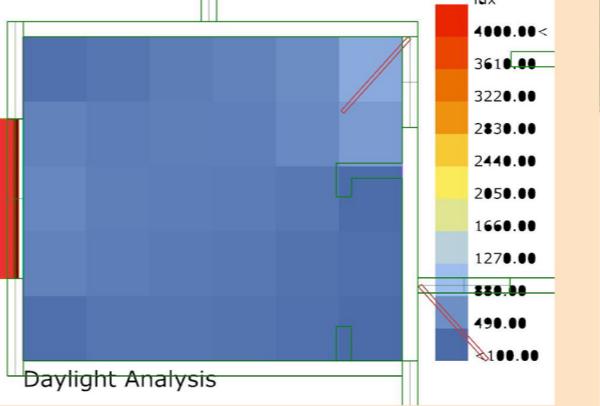
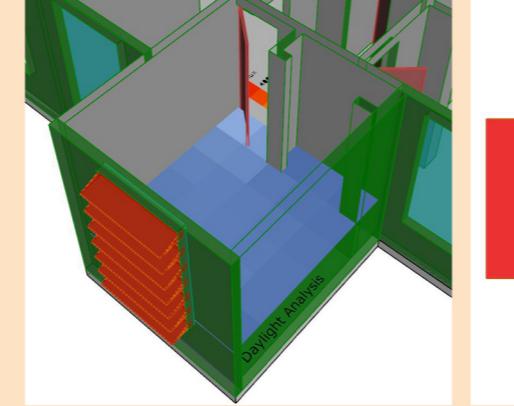
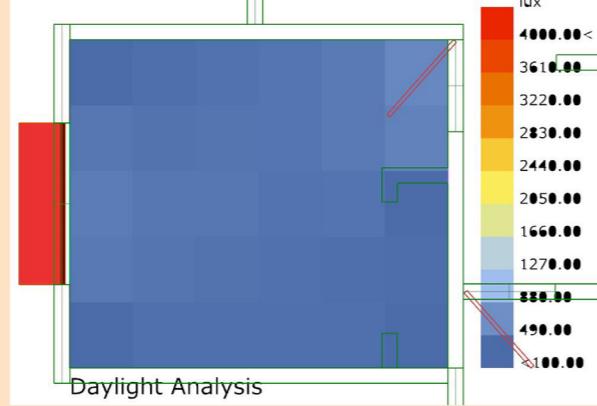
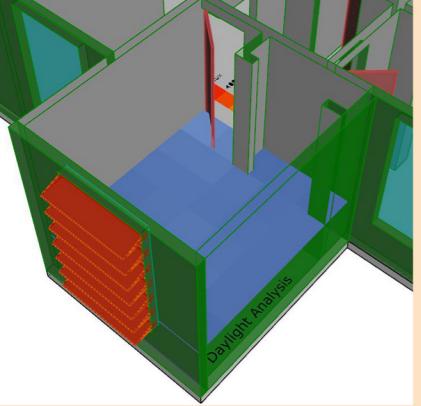
VERTICAL LOUVERS



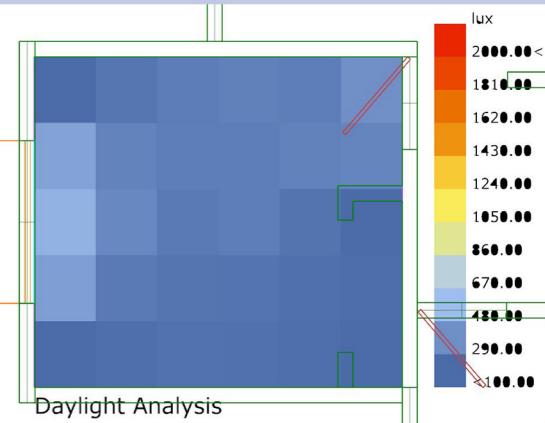
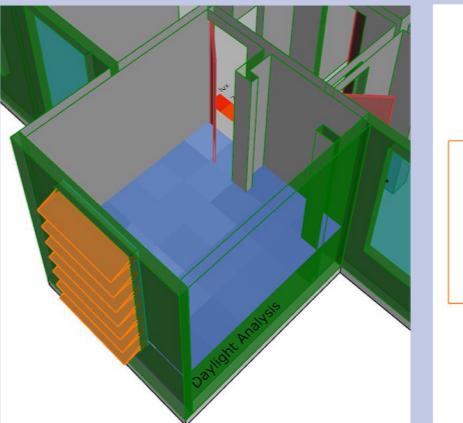
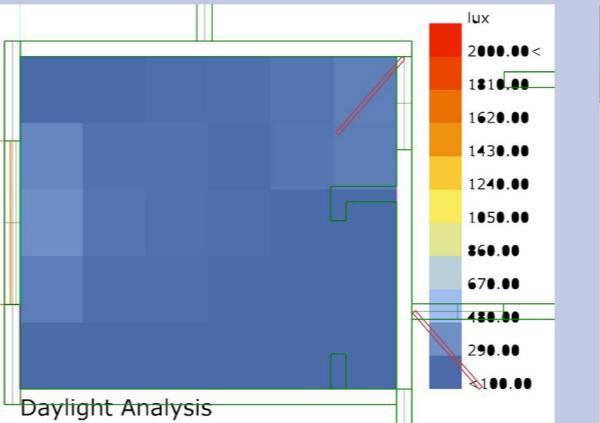
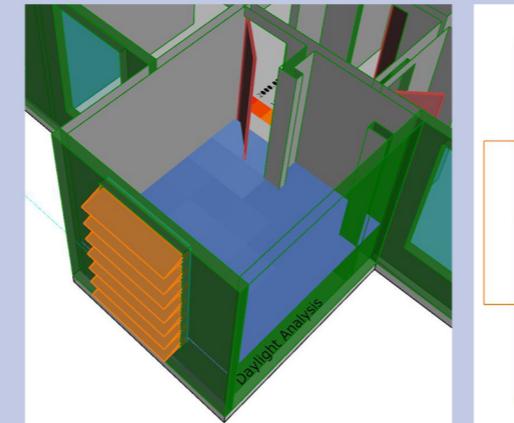
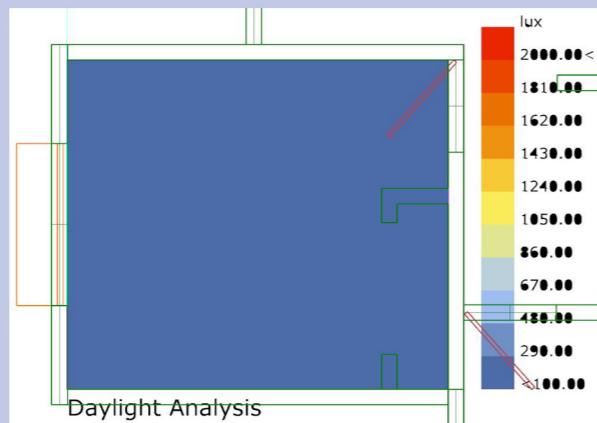
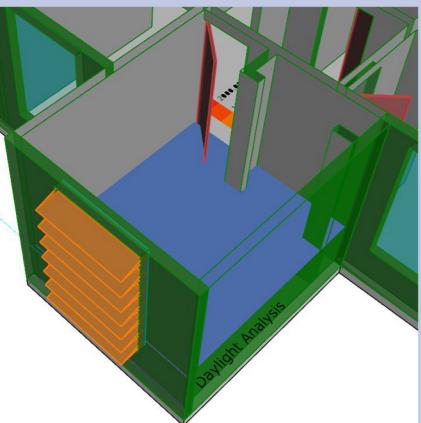
SUMMER
(JUNE 21)



FALL
(SEPTEMBER 21)

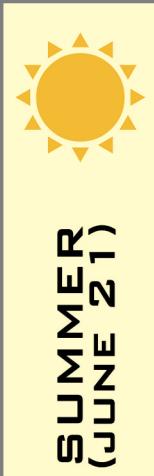


WINTER
(DECEMBER 21)

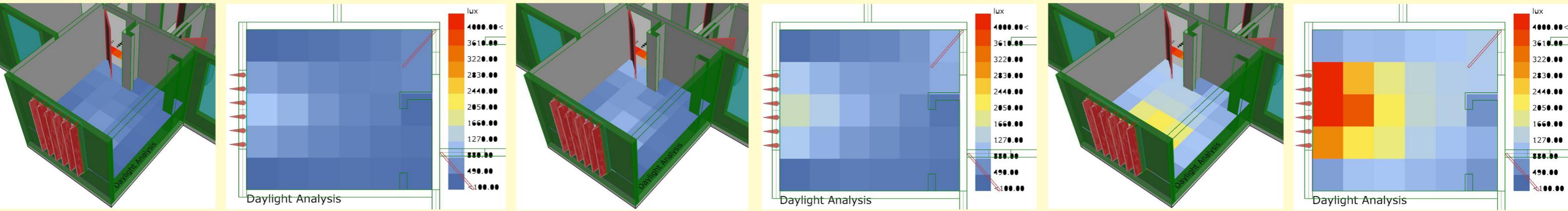


SHADING SYSTEM #2

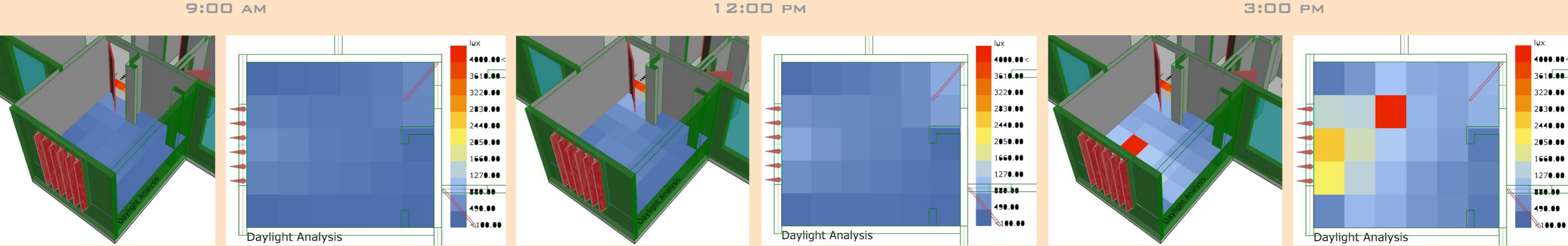
HORIZONTAL OVERHANGS



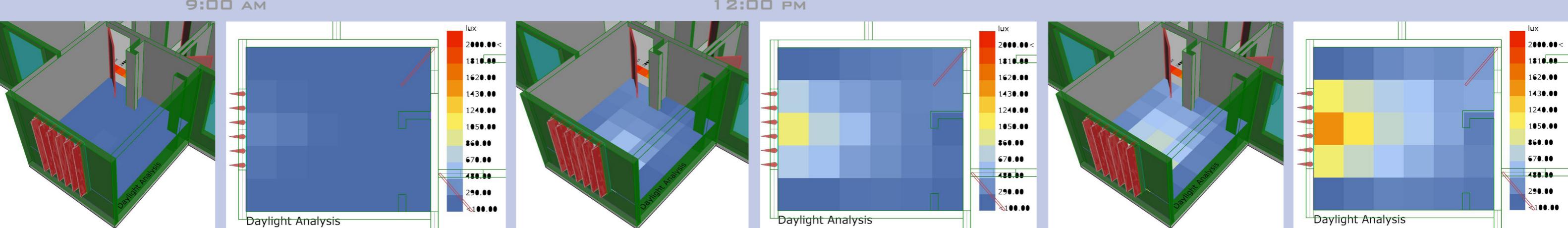
SUMMER
(JUNE 21)



FALL
(SEPTEMBER 21)



WINTER
(DECEMBER 21)

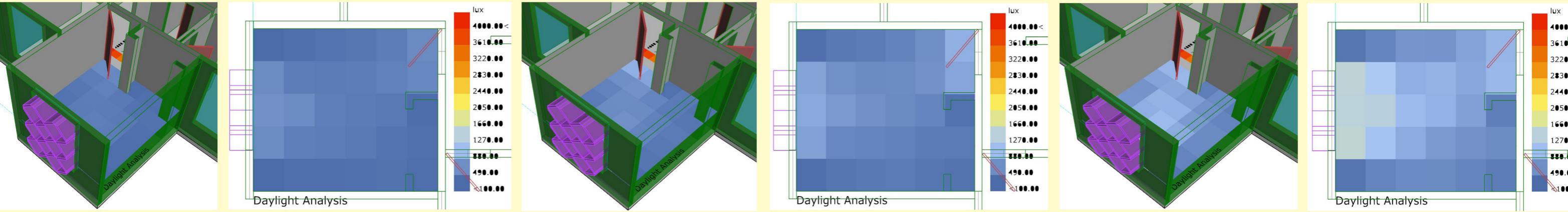


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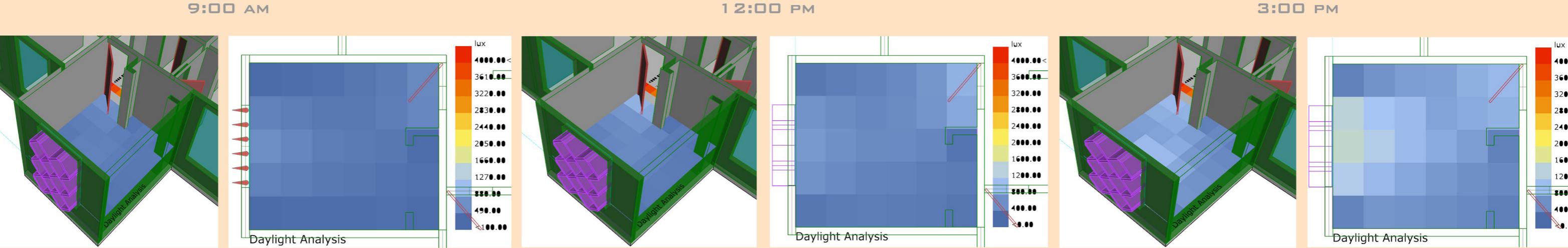
MIXED SYSTEM



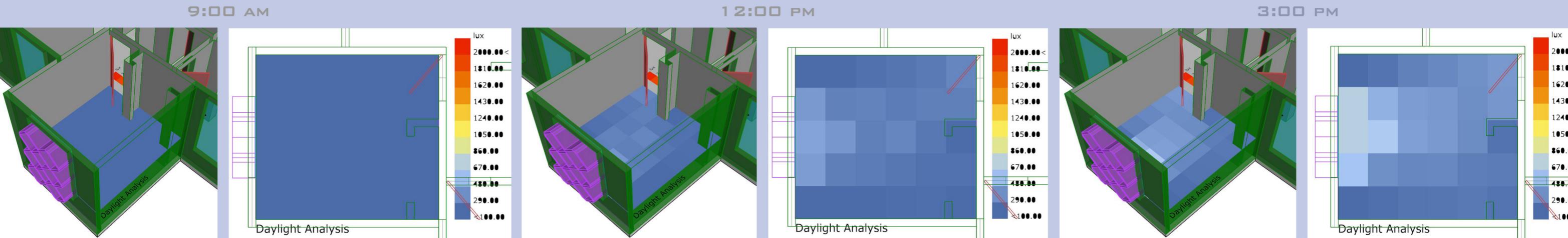
SUMMER
(JUNE 21)



FALL
(SEPTEMBER 21)

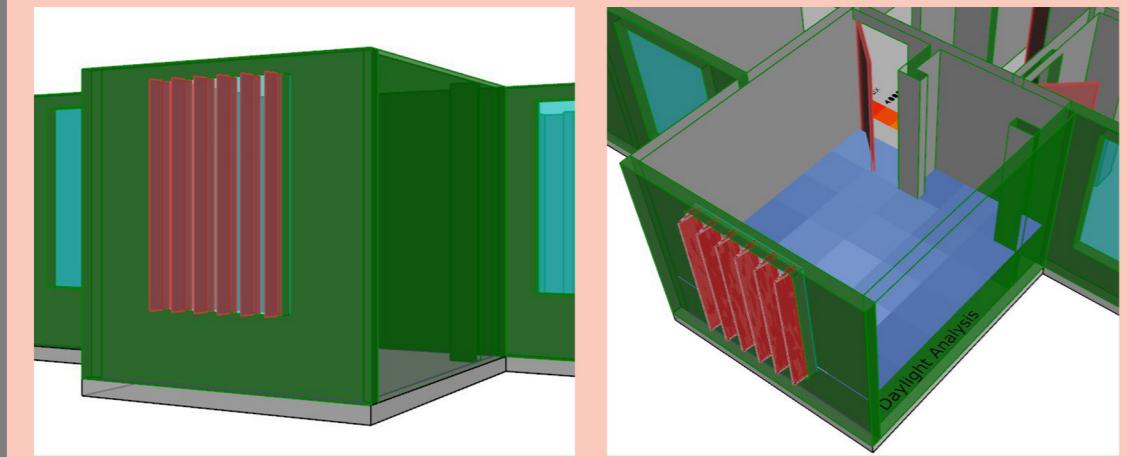


WINTER
(DECEMBER 21)

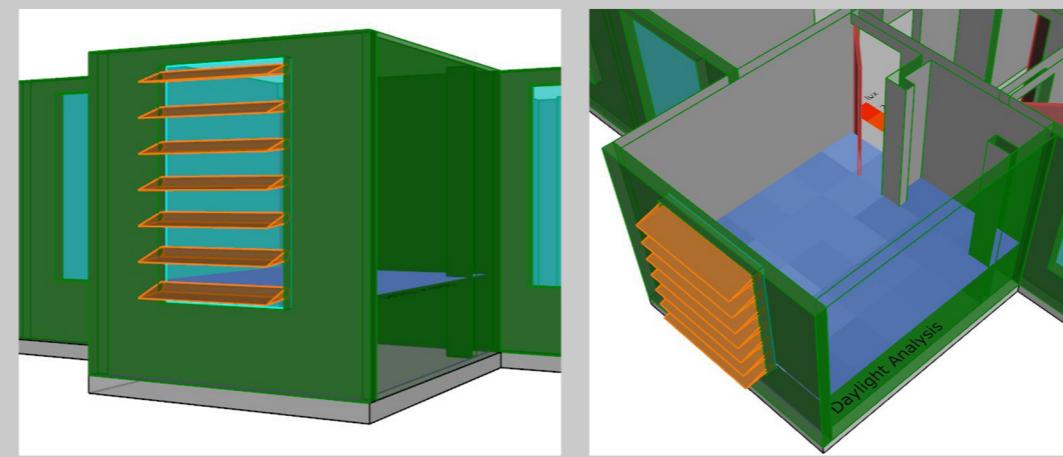


CONCLUSIONS

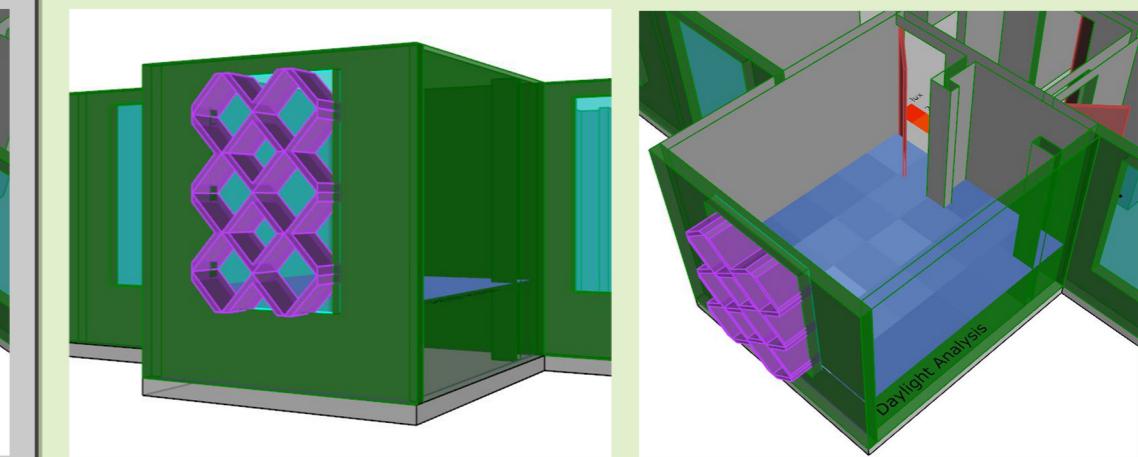
SHADING SYSTEM #1



SHADING SYSTEM #2



SHADING SYSTEM #3



- WITH THIS VERTICAL LOUVERS SYSTEM, LIGHTING LEVELS ARE CONSIDERABLY HIGH DURING THE SUMMER TIME, SEASON WHEN TEMPERATURES AND HUMIDITY ARE EXTREMELY HIGH AND THE ROOM NEEDS TO BE PROTECTED FROM SOLAR RADIATION.

- EVENTHOUGH THIS IS THE SYSTEM THAT PROVIDES THE MOST AMOUNT OF DAYLIGHTING DURING THE WINTER, THERE ARE A COUPLE OF SPOTS IN THE AFTERNOON HOURS ABOVE 1,500 LUX THAT CAN END UP BEING UNCOMFORTABLE.

- IN TERMS OF MATERIALS CONSUMPTION, THIS SYSTEMS REQUIRES THE MOST AMOUNT OF LINEAR METERS OF SHADING IN ORDER TO BE ASSEMBLED (11.94 M).



Poor Performing System



Medium Performing System

- WITH THIS HORIZONTAL OVERHANGS SYSTEM, LIGHTING LEVELS ARE QUITE LOW DURING THE SUMMERS, BUT ALSO QUITE LOW DURING THE WINTERS, MAKING THE SPACES COMFORTABLE IN HOT WEATHERS AND UNCOMFORTABLE IN COLD WEATHERS.

- EVENTHOUGH THIS IS A PLACE WITH PREDOMINANTLY HOT TEMPERATURES, THERE ARE SOME TIMES OF THE YEAR WHERE TEMPERATURE DROPS DRAMATICALLY, AND THEREFORE A SYSTEM THAT ALLOWS THE MOST AMOUNT OF RADITION DURING THE WINTERS IS REQUIRED (NOT THE CASE OF THIS SYSTEM).

- IN TERMS OF MATERIALS CONSUMPTION, THIS SYSTEMS REQUIRES AN INTERMEDIATE AMOUNT OF LINEAR METERS OF SHADING IN ORDER TO BE ASSEMBLED (8.96 M).

- WITH THIS MIXED OVERHANGS SYSTEM, LIGHTING LEVELS ARE STILL LOW DURING THE SUMMERS, BUT ARE SLIGHTLY HIGGHER DURING THE WINTERS, MAKING THE SPACES COMFORTABLE IN HOT AND COLD WEATHERS.

- EVENTHOUGH THE AMOUNT OF DAYLIGHT DURING THE SUMMER IS SLIGHTLY HIGGHER, COMPARED WITH SYSTEM #2, THE LUX LEVELS ARE NOT UNCOMFORTABLE AND ARE WITHIN THE RANGE OF USEFUL DAYLIGHT ILLUMINANCE.

- IN TERMS OF MATERIALS CONSUMPTION, THIS SYSTEMS REQUIRES THE LOWEST AMOUNT OF LINEAR METERS OF SHADING IN ORDER TO BE ASSEMBLED (7.92 M).



Good Performing System