ASSIGNMENT:

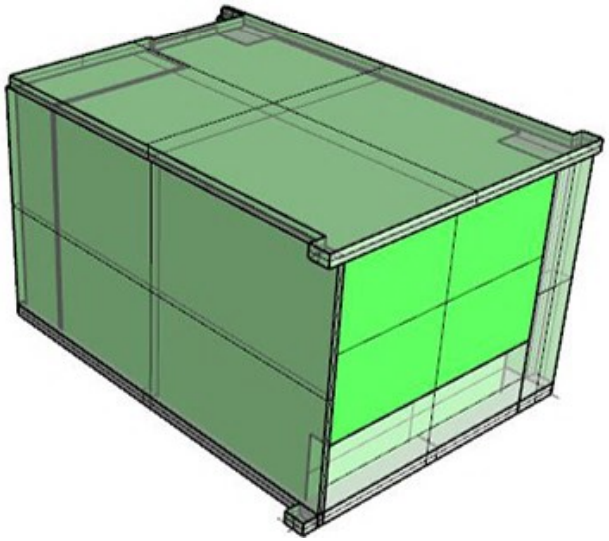
DAYLIGHTING ANALYSIS AND DESIGN

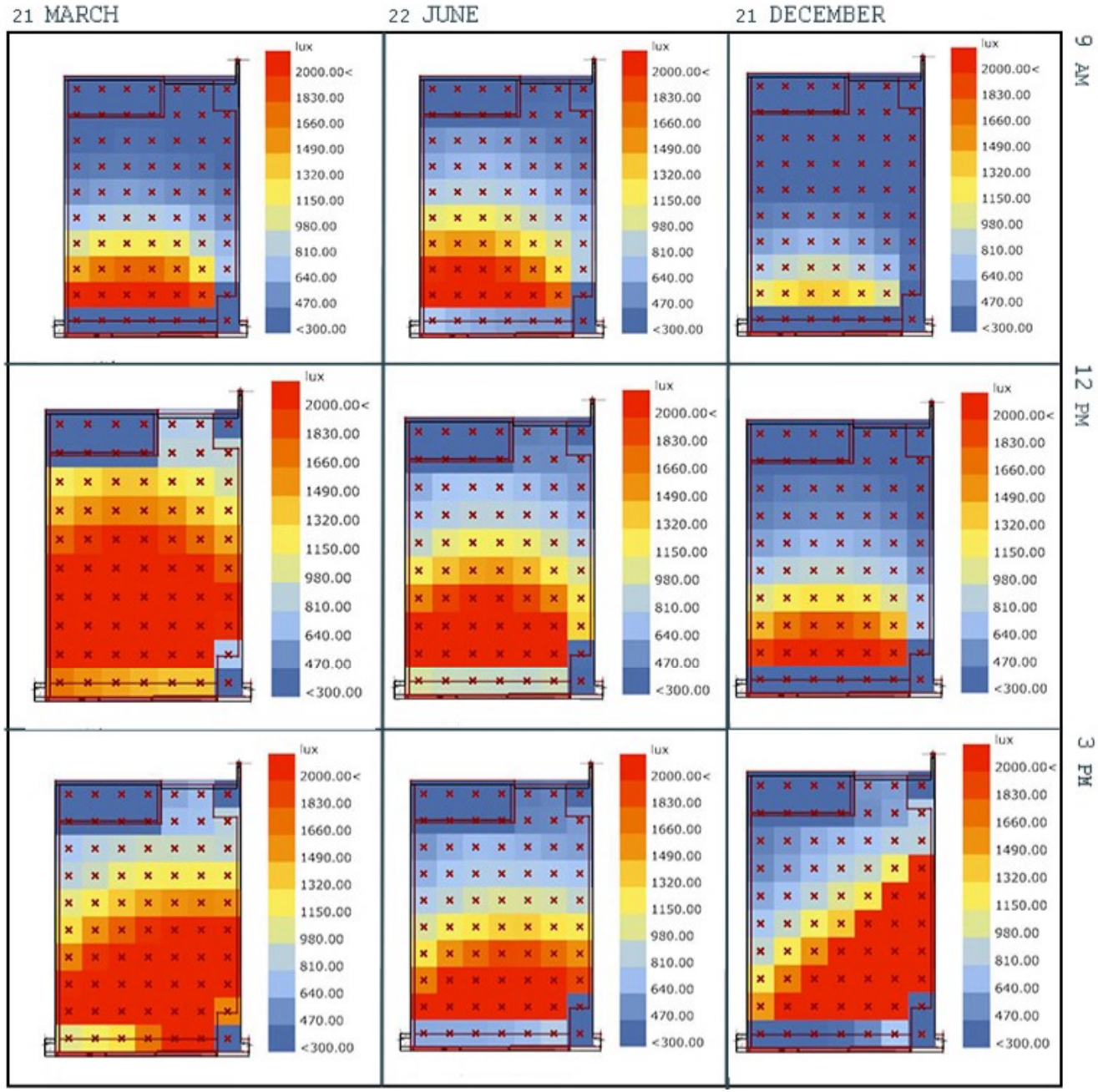
BUILDING PERFORMANCE AND SIMULATION

SUBMITTED BY_ SILMI FARAH

SHADING ANALYSIS AND DESIGN:

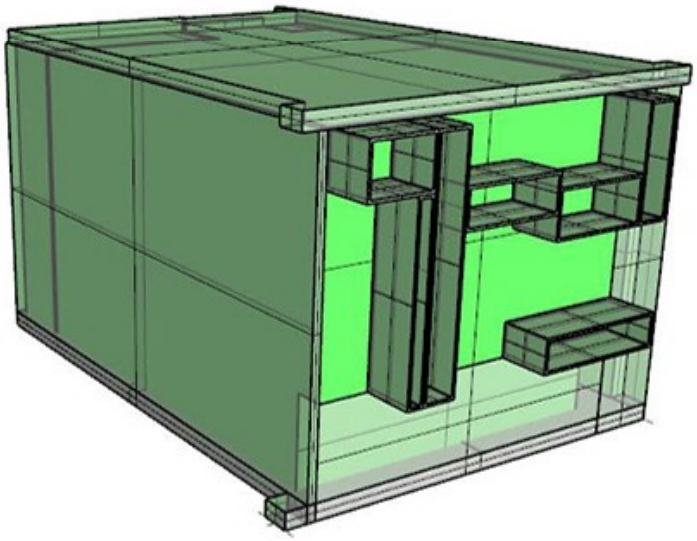
HAVING A SOUTHERN SURFACE WITH CURTAIN GLASS IT ALREADY HAS SUFFICIENT LIGHTING. HOWEVER, YEARLONG RADIATION IS A MAJOR PROBLEM. THIS CONTROL OF GLARE WAS THE PRIME FOCUS OF DESIGN.





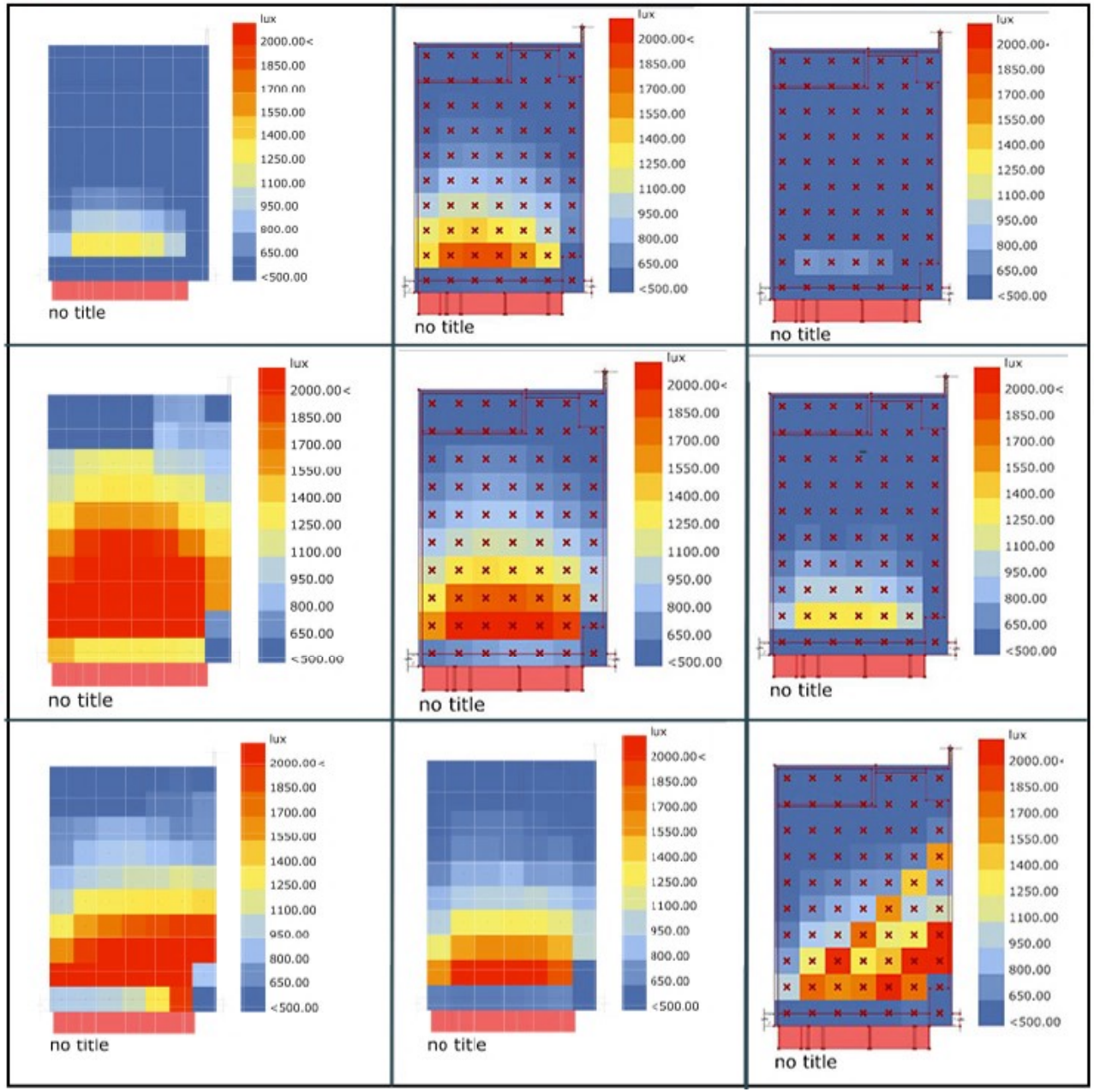
STEP 1:

INTRODUCING SOME EGG CRATE SHADING OF VARIOUS SIZE AND PROPORTION RECESSING OUT OF THE WINDOW. AND THE ANALYSIS RESULT STILL TURNED OUT MUCH GLARED.



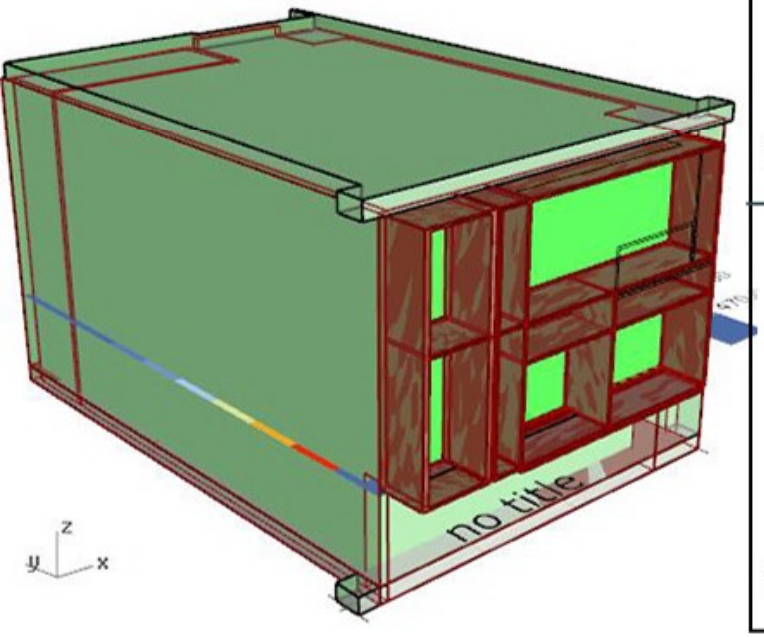
21 MARCH | 22 JUNE | 21 DECEMBER

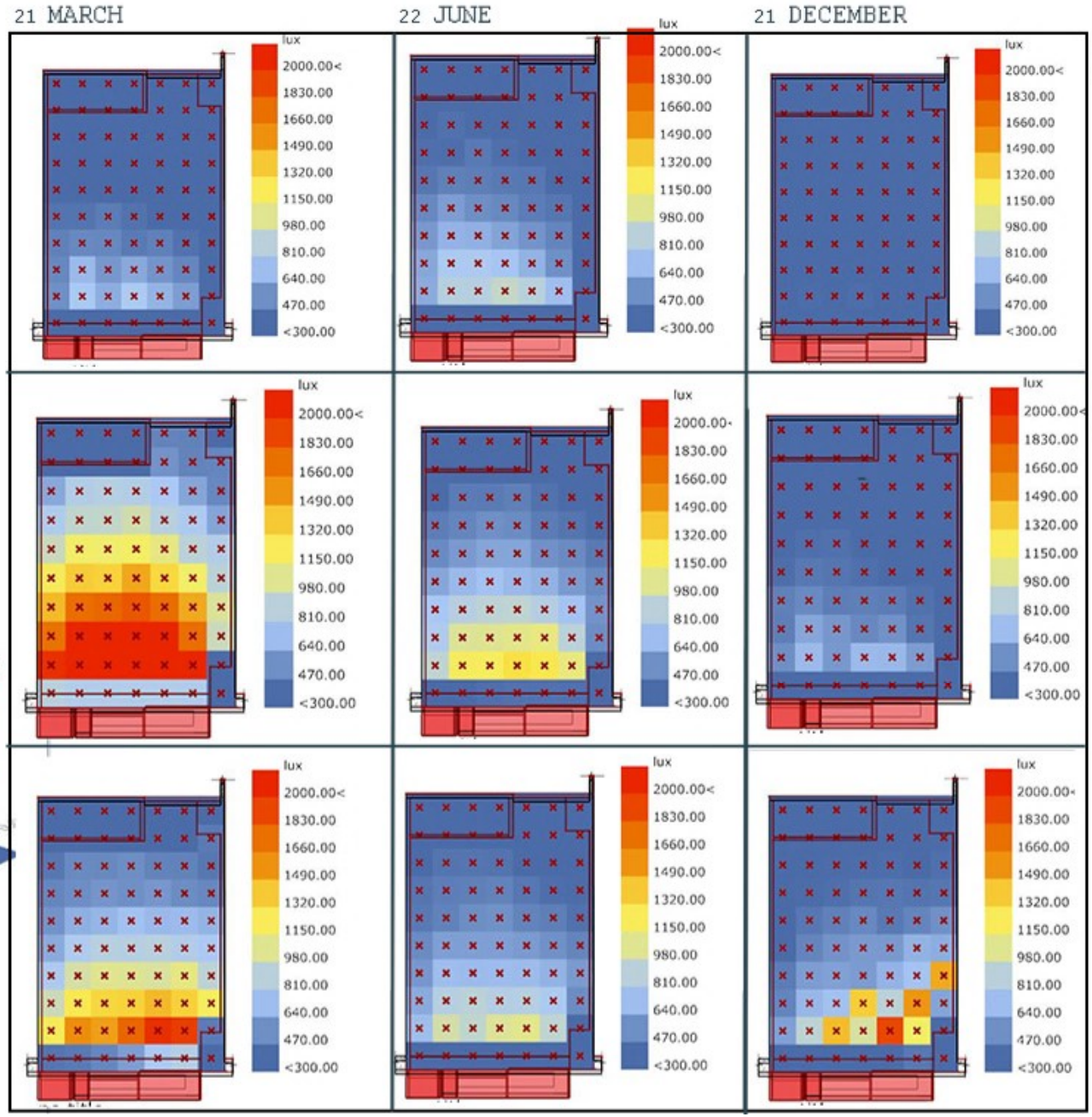
9 AM | 12 PM | 3 PM



STEP 2:

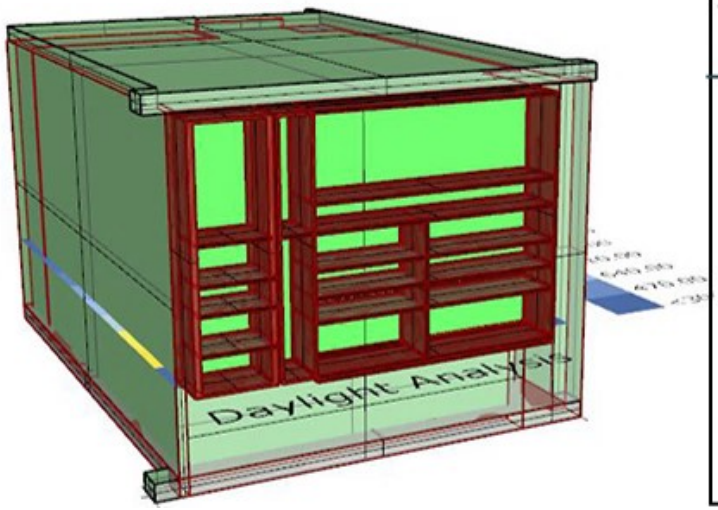
TRIAL AND ERROR OF MOVING AND SCALING THE SHADES AND THE LIGHT SHELFS UNTIL DESIRED RESULT. STILL SOME PLACES INSIDE THE ROOM MAY BE BELOW 300 LUX BUT CONSIDERING THAT IS INACTIVE ZONE WITHOUT ANY READING OR DAILY ACTIVITIES REQUIREMENT.

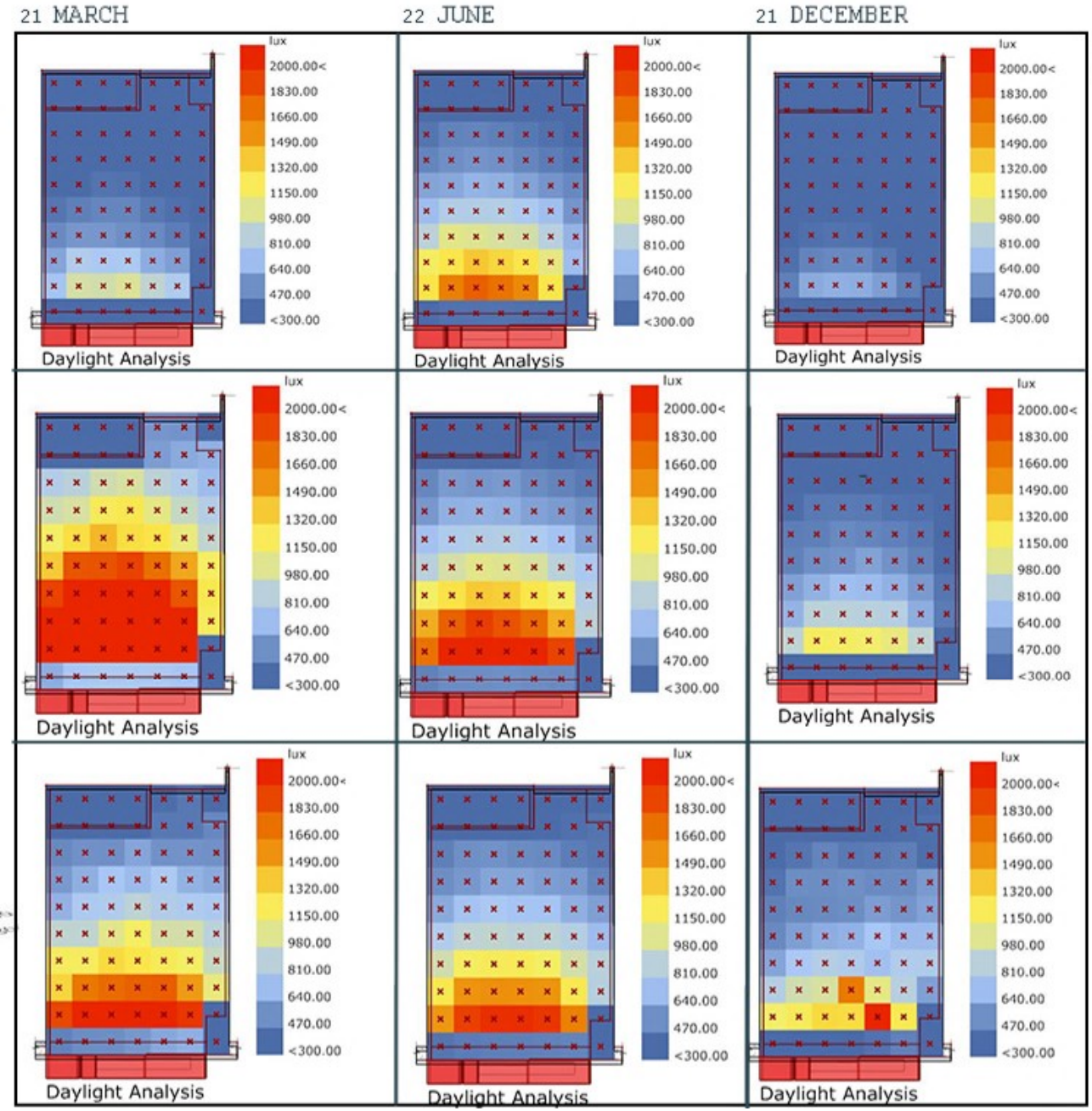




STEP 3:

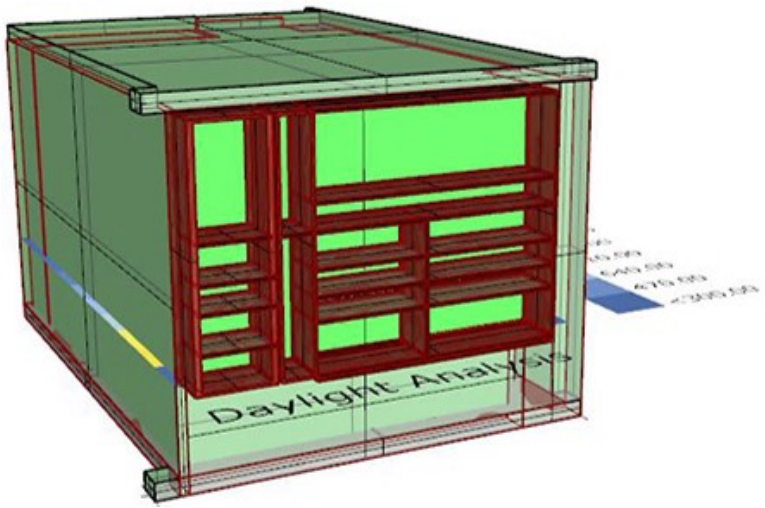
THE PROBLEM STILL PERSISTED IN UNIFORM DISTRIBUTION OF LIGHT. THEREFORE THE TOP OPENING WAS MORE OPENED AND THE VIEW LEVEL WAS LEAST OPENED NOT TO INTERRUPT THE OCCUPANTS VIEW OUTSIDE. HOWEVER, THE UPPER SHADES WORKED AS LIGHT-SHELVES.

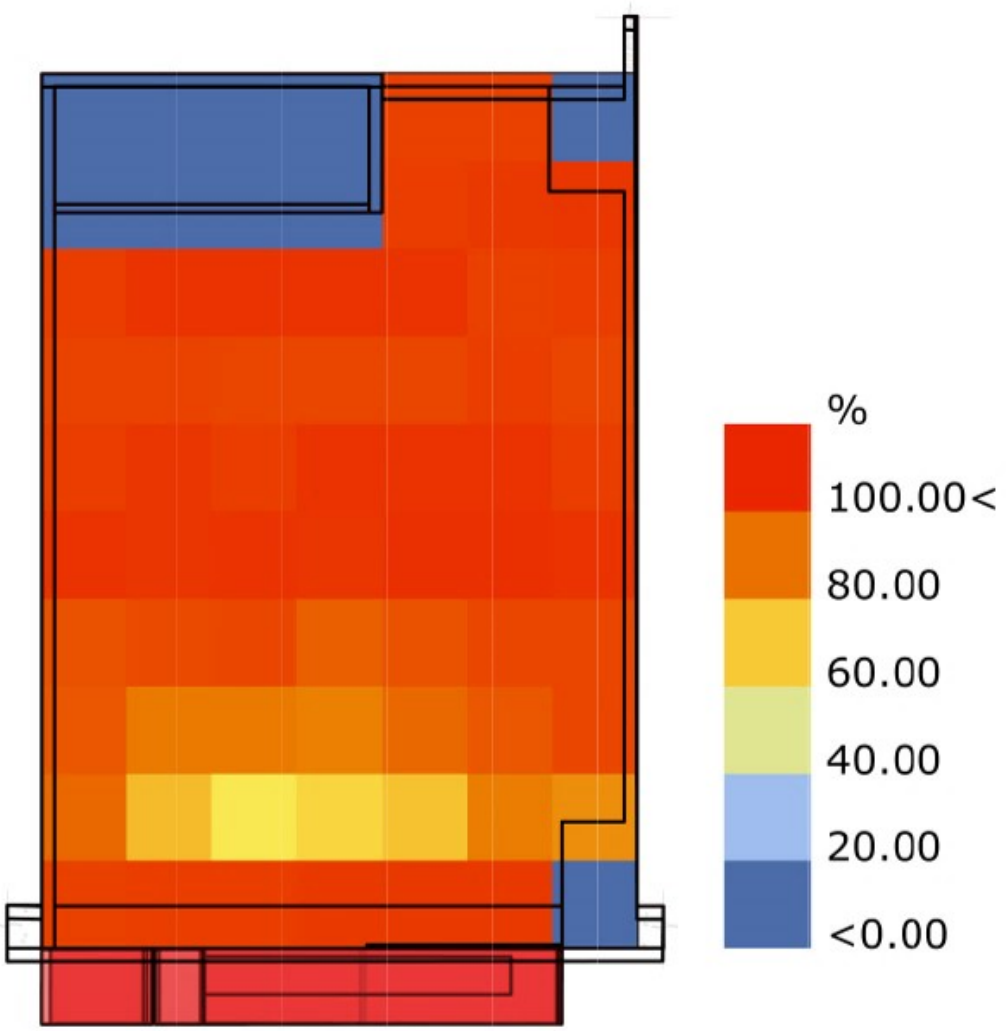




ANNUAL DAYLIGHT ANALYSIS: UDI

THE CUMULITIVE VALUE OF ALL OVER DAYLIGHTING THROUOUT THE YEAR IS QUITE SATISFACTORY. THE BLUE AREAS ARE INSIDE THE CLOSET AND CLOUMNS. THE YELLOW ZONE IS REALLY NEAR THE SOUTH-FACING WINDOW SO IT HAS SOME DIRECT RADIATION IN CASES OF FEASIBLE SHADING.





Annual Illuminace Study
Dream Room

GLARE ANALYSIS:

GLARE ANALYSIS SHOWS THAT EACH SEASON AND TIME OF THE DAY IT MAINTAINS A UNIFORM LEVEL OF LIGHTING AND NO GLARE THROUGHOUT THE YEAR