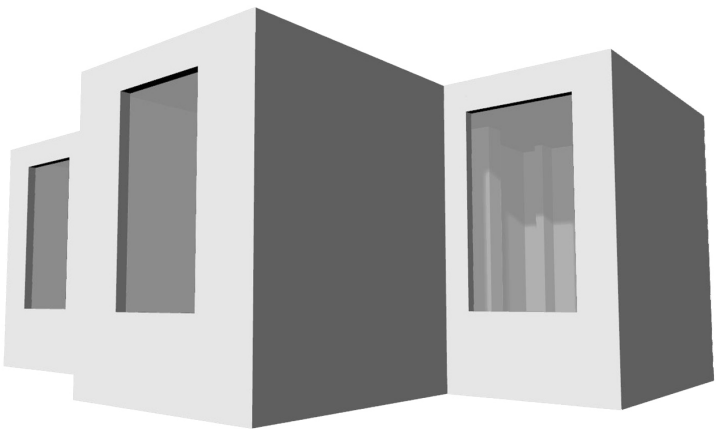# BUILDING PERFORMANCE SIMULATION FINAL PROJECT:

MAKING MY DREAM ROOM A REALITY
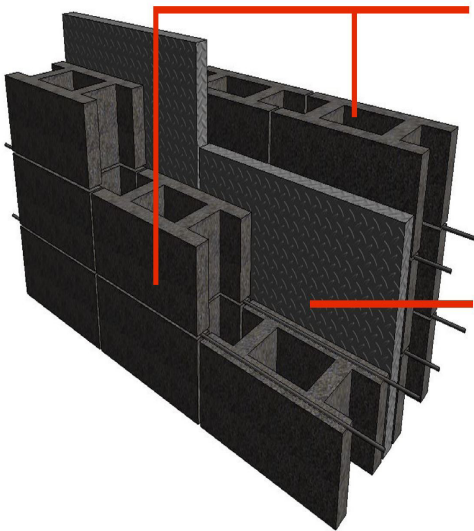
### OKLAHOMA CITY - OKLAHOMA - USA



BASELINE ROOM

IMPROVEMENT STRAGIES

CONCRETE MASONRY UNIT:
- ROUGHNESS: Medium
- THICKNESS: 0.20 METERS
- CONDUCTIVITY: 1.95 W/M·K
- DENSITY: 2240 KG/M3
- SPECIFIC HEAT: 900 J/KG·K
- THERMAL ABSORBANCE: 0.9
- SOLAR ABSORBANCE: 0.7

THERMAL VISIONS VACUUM INSULATED PANELS:
- ROUGHNESS: Medium
- THICKNESS: 0.05 METERS
- CONDUCTIVITY: 0.005 W/M·K
- DENSITY: 190 KG/M3
- SPECIFIC HEAT: 837 J/KG·K
- THERMAL ABSORBANCE: 0.9
- SOLAR ABSORBANCE: 0.5
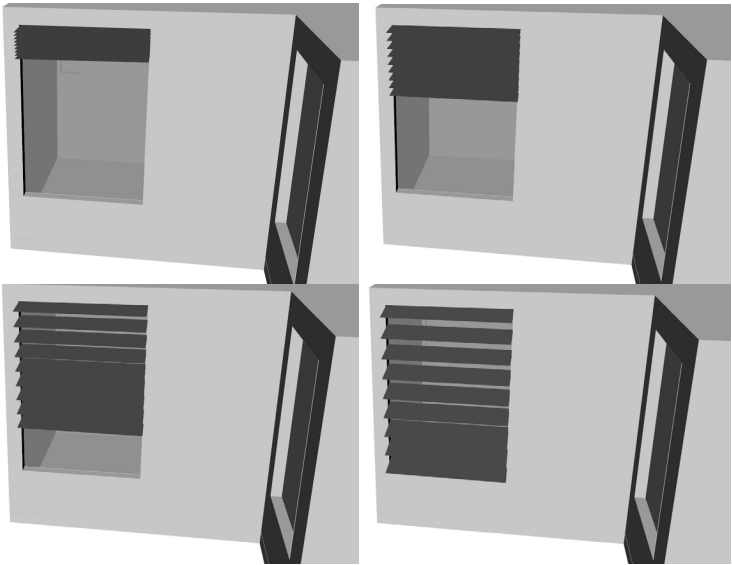
Custom Window + Wall Configuration
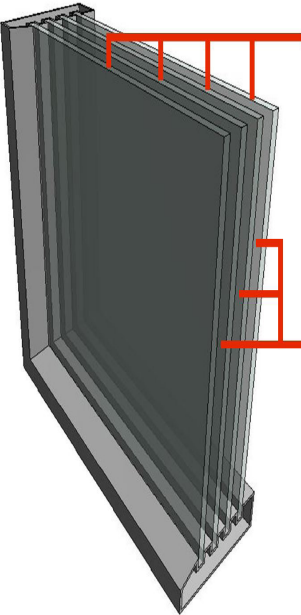
LOW E COATED WINDOW GLAZING:
- THICKNESS: 0.003 METERS
- SOLAR TRANSMITTANCE AT NORMAL INCIDENCE: 0.69
- SOLAR REFLECTANCE: 0.01
- VISIBLE TRANSMITTANCE: 0.50
- VISIBLE REFLECTANCE: 0.45
- FRONT EMISSIVITY: 0.40
- BACK EMISSIVITY: 0.40
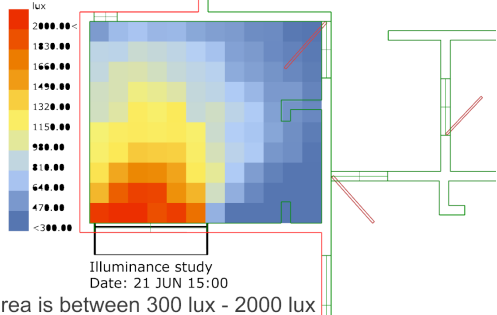
AIR GAP
- THICKNESS: 0.0127 METERS

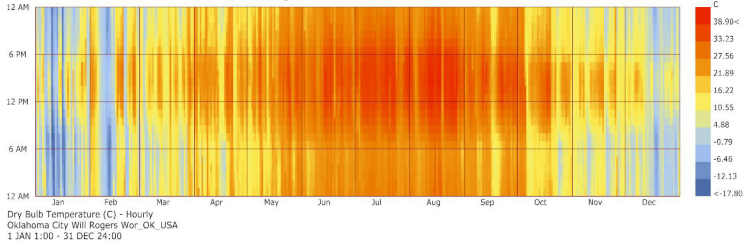## Deployable Shading + Daylight Analysis

WITHOUT SHADING
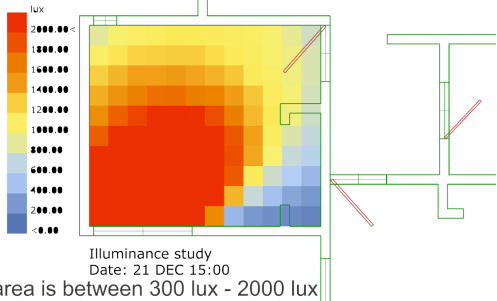
Illuminance study
Date: 21 DEC 15:00
66% of area is between 300 lux - 2000 lux

WITH SHADING

Illuminance study
Date: 21 JUN 15:00
89% of area is between 300 lux - 2000 lux

Yearly Temperature

Dry Bulb Temperature (C) - Hourly
Oklahoma City Will Rogers Wor_OK_USA
1 JAN 1:00 - 31 DEC 24:00

Yearly Humidity

Relative Humidity (%) - Hourly
Oklahoma City Will Rogers Wor_OK_USA
1 JAN 1:00 - 31 DEC 24:00
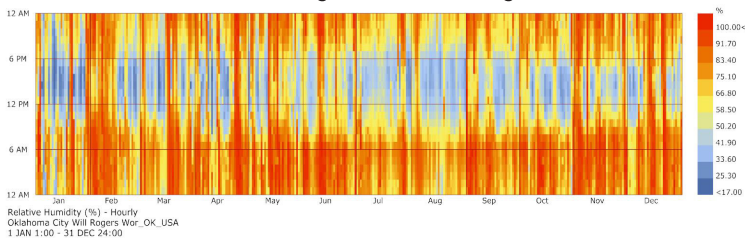
Baseline Energy Loads Balance
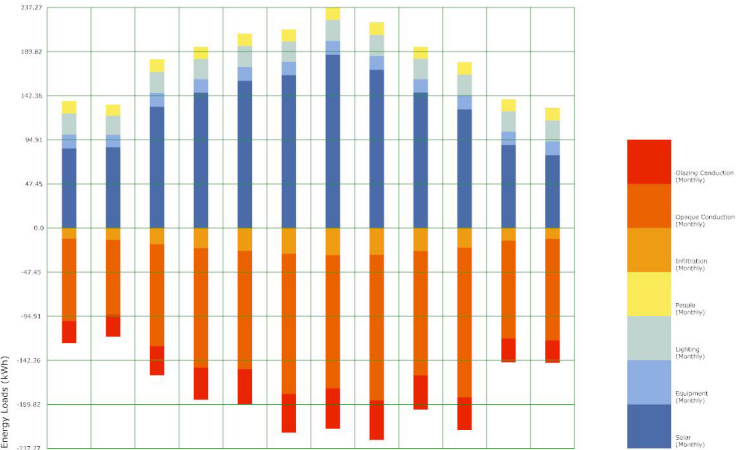
Custom Occupancy Schedule

Not Occupied
Occupied
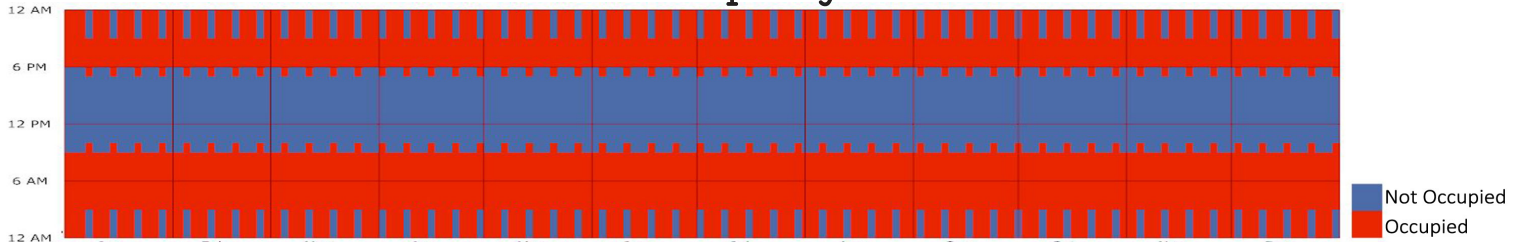
Electric Lighting Loads