

Mount Angel Gallery
Location: Mt. Angel, OR (45 N, 123 W)



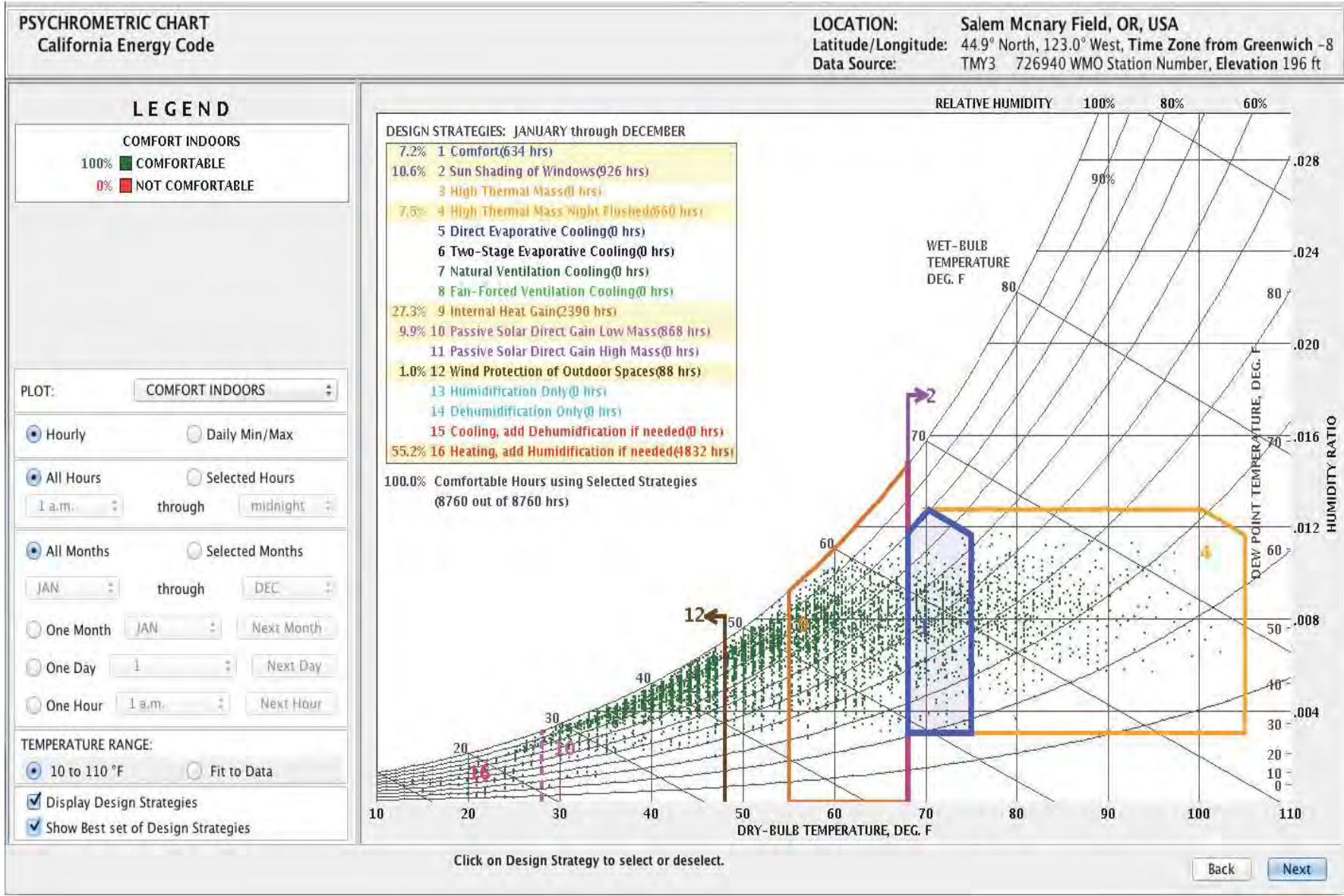
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Arch 140 || Brager, Schiavon + Caroline || Spring 2015

Design Objectives and Goals

The design objective of this gallery space is to enhance the beauty and experience of artwork through gradients of light. The transient experience of the space resonates through the narrative, expressed through a gradient lighting as visitors enter into a brightly light room and travel through diffused levels of light until they exit the building.

The gallery consists of three distinct spaces of direct, semi-diffused, and fully diffused light. The space with direct-light houses non-light sensitive sculptures that benefit from the play of light and shadows cast upon them from the southeast and east-facing windows. The intermediary space following the sculpture room transitions visitors to a different medium of non-light sensitive art: paintings. As one walks through this space, light from both the etched and clear glass clerestory windows provide a gentle wash of ambient lighting that becomes more diffused as one makes their way towards the light-sensitive space of the gallery. Artwork displayed in this area is mounted on a wall with an opening on the bottom and double-paned etched glass on the top, which enhances the subdued experience of the space as visitors complete their journey and exit the building.

To complement the gradient of light throughout the gallery, the wall surfaces also present a gradient of color. The floor is of exposed concrete while gray surfaces dominate the non-light sensitive spaces and white surfaces are reserved for the ceiling and light-sensitive spaces. Just as the gray surfaces help to lessen the effects of glare, the white surfaces allow for the light to further diffuse.



Psychrometric Chart (Climate Consultant)

Air Temperature: Average annual temperature range from 40 F to 70 F. Annual average air temperature falls below comfort zone, making Mt. Angel, OR a heating dominated climate.

Sky Coverage: High sky coverage, annual mean of about 63%. Generally overcast conditions.

Challenges: Daylighting- since climate is relatively overcasts, the challenge would be getting ample sunlight into the space while providing general shading during sunny summer days.

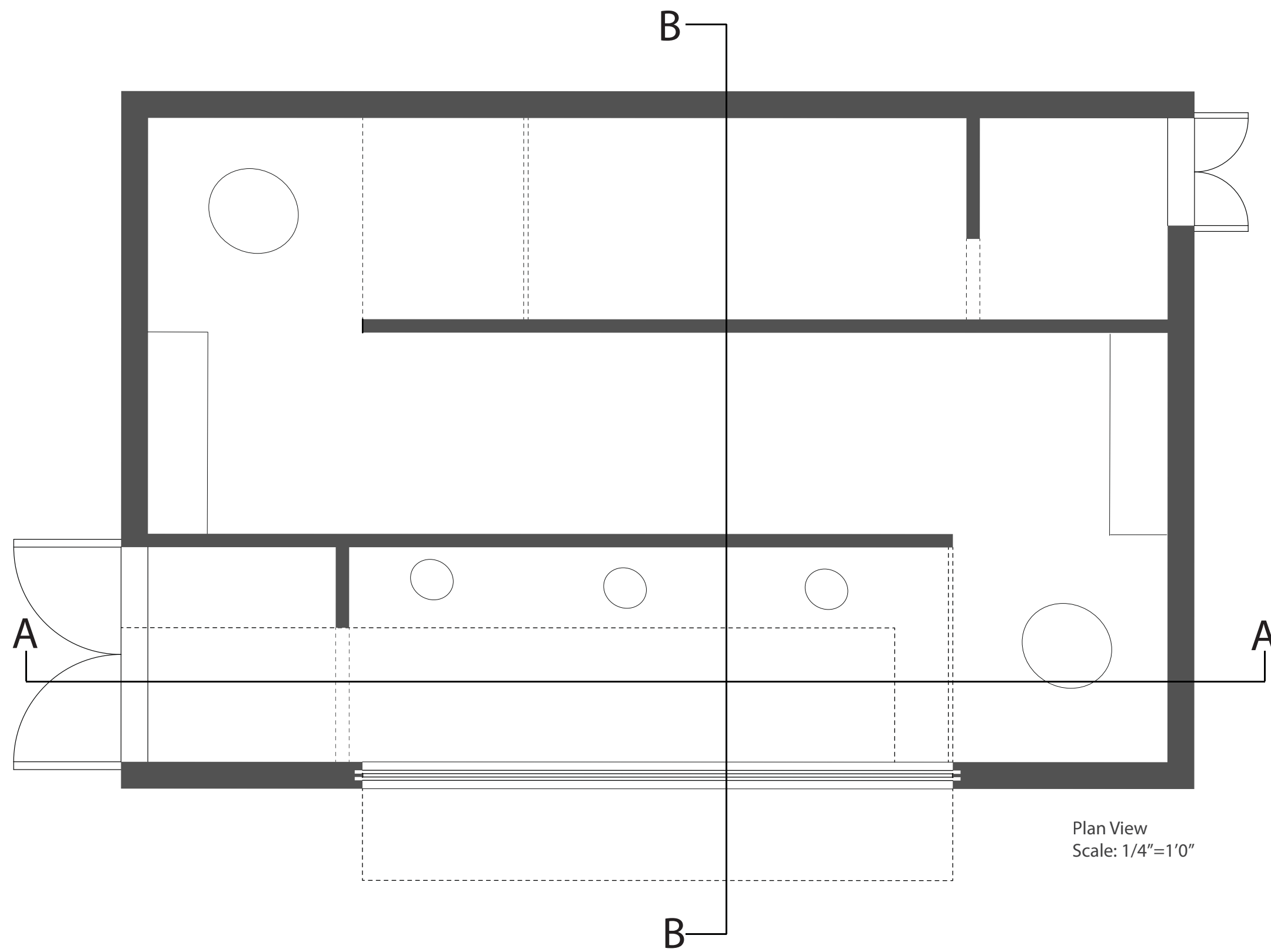
Energy use: since climate is relatively cool throughout the year, the main challenge is heating up the gallery space and providing cooling if needed be.

Window to Wall Ratios

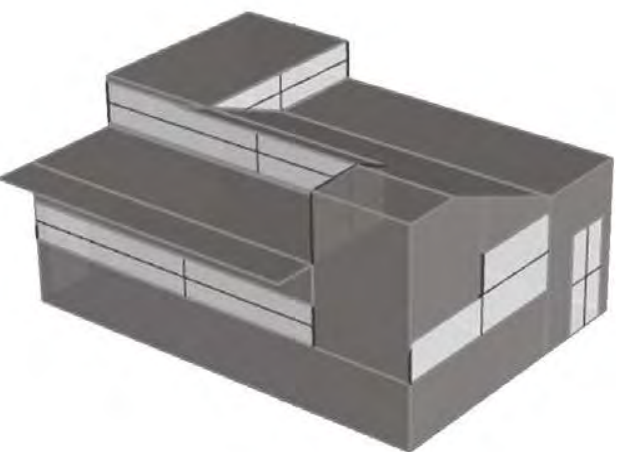
Southern Facade: 47.36%
Western Facade: 26.67%
Eastern Facade: 33.33%

Average U-Values per facade (Btu/ft^2 hr F)

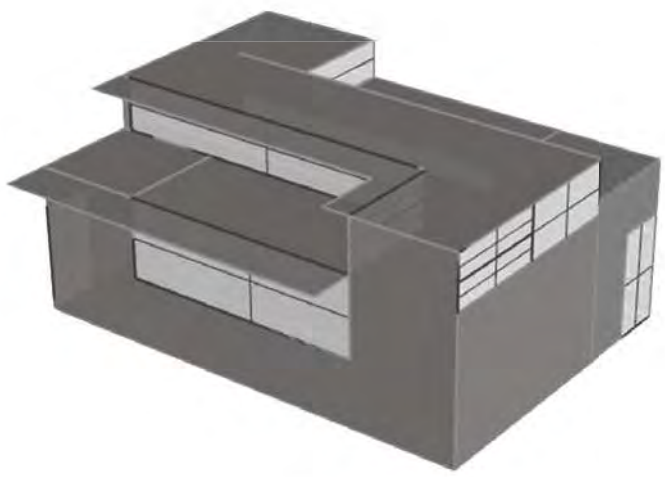
Southern Facade: .13583
Western Facade: .09904
Eastern Facade: .16049



First Iteration



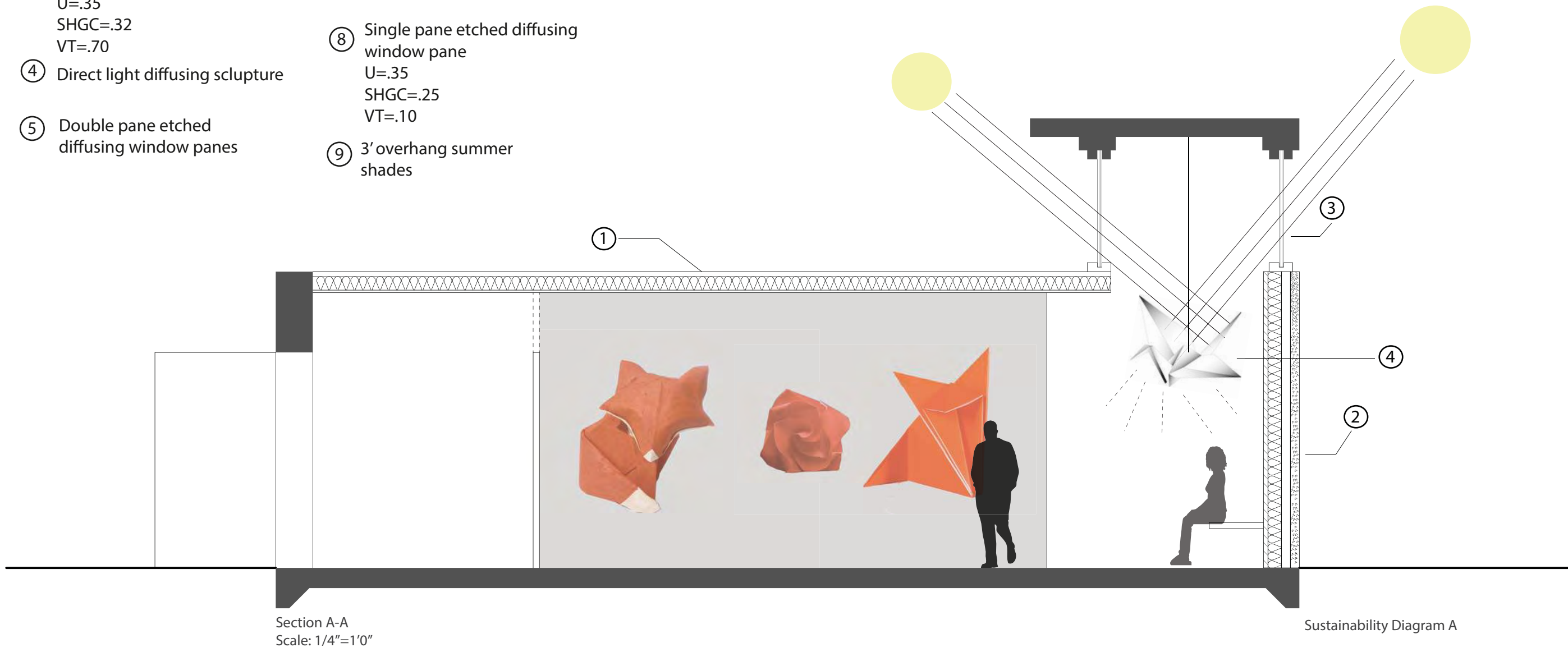
Second Iteration



Current Iteration

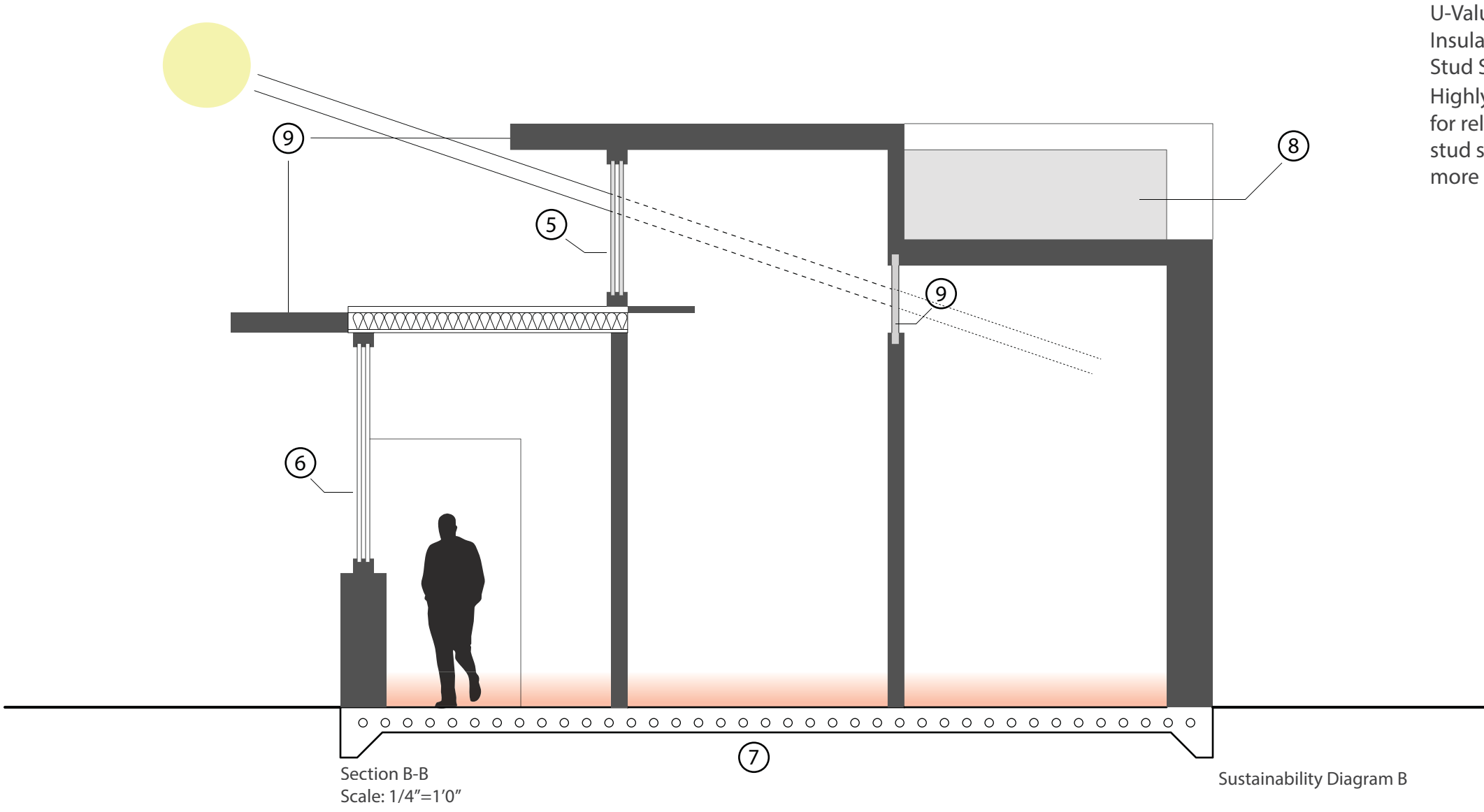
Sustainable Strategies Diagram

- 1 R-40 Roof Assembly
- 2 R-45 Advanced 2x6 Frame Wall Assembly
- 3 Low-e double pane glass window U=.35 SHGC=.32 VT=.70
- 4 Direct light diffusing sculpture
- 5 Double pane etched diffusing window panes
- 6 Low-e double pane glass window U=.35 SHGC=.32 VT=.70
- 7 Radiant concrete floor slab
- 8 Single pane etched diffusing window pane U=.35 SHGC=.25 VT=.10
- 9 3' overhang summer shades



Section A-A
Scale: 1/4"=1'0"

Sustainability Diagram A

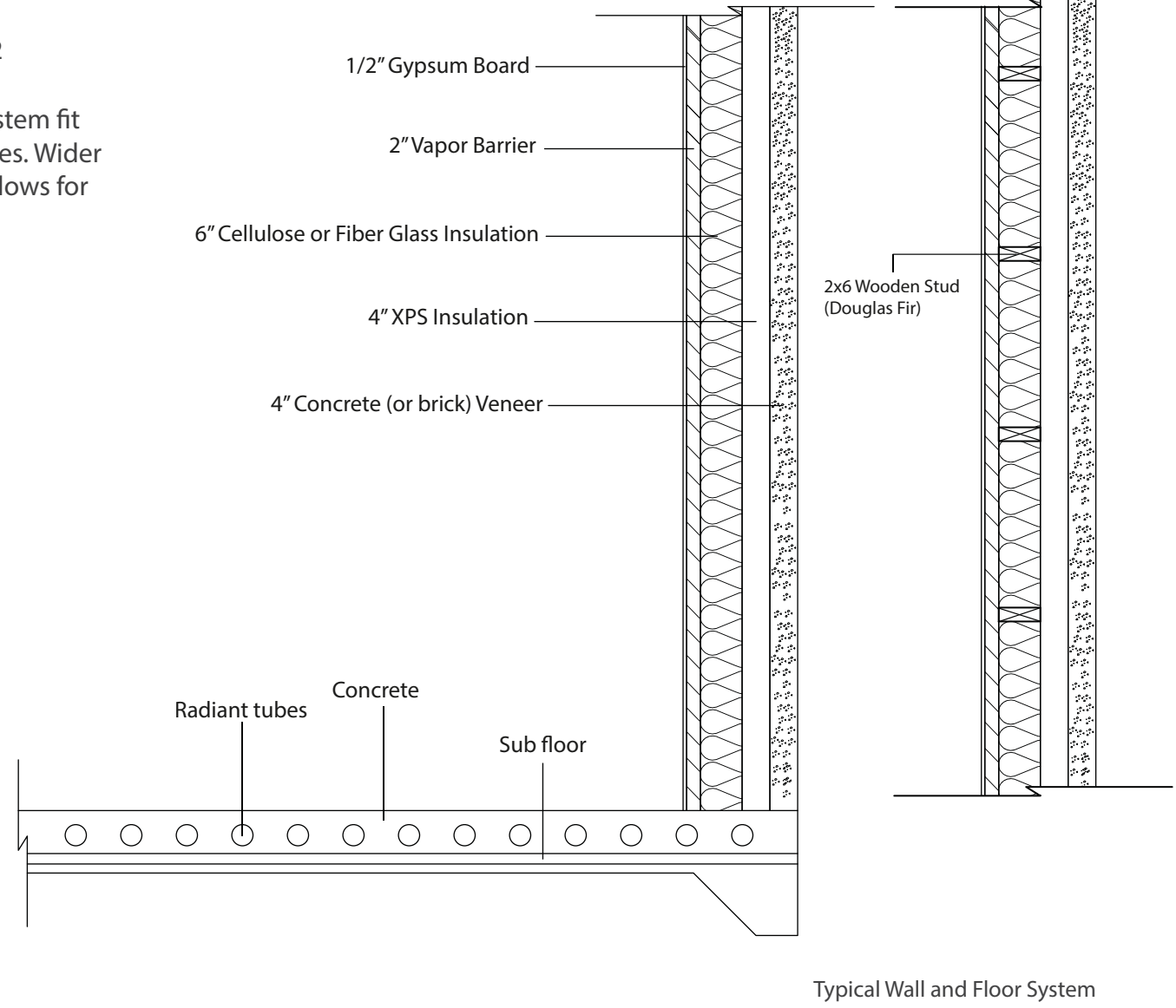


Section B-B
Scale: 1/4"=1'0"

Sustainability Diagram B

Wall Assembly: Advanced 2x6 Wooden Structural Framing

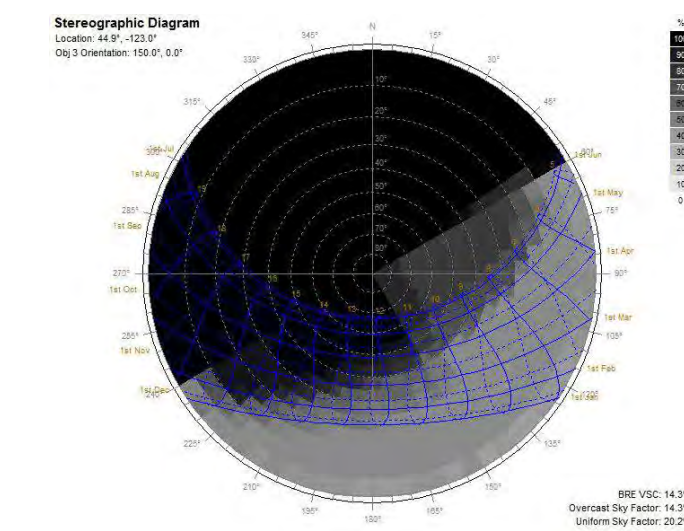
U-Value (Btu/ft^2-hr-F):
Insulation Series = .0222
Stud Series = .0336
Highly insulated wall system fit for relatively cold climates. Wider stud spacing (24" o.c.) allows for more insulation space.



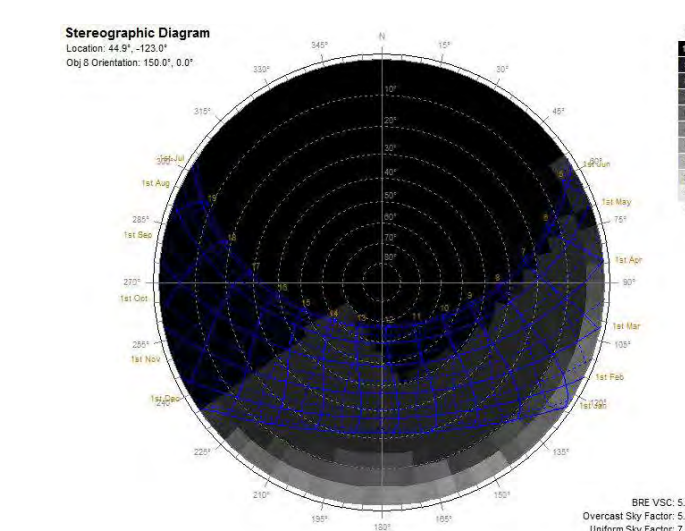
Typical Wall and Floor System



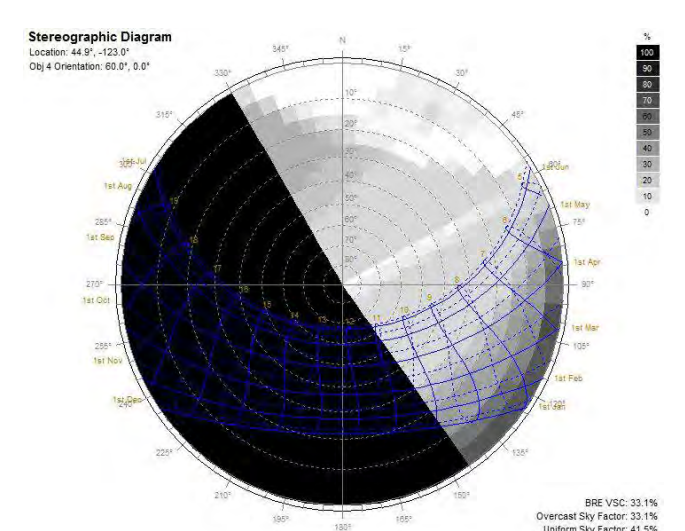
Ecotect Analysis -- Interpretation



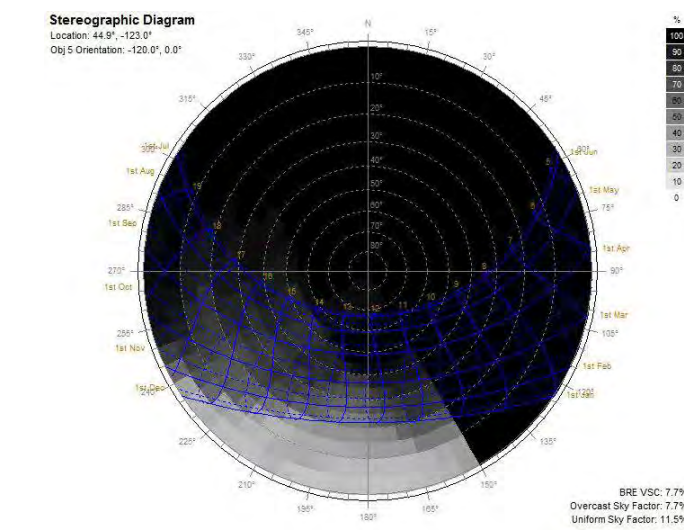
Southeast Lower Window



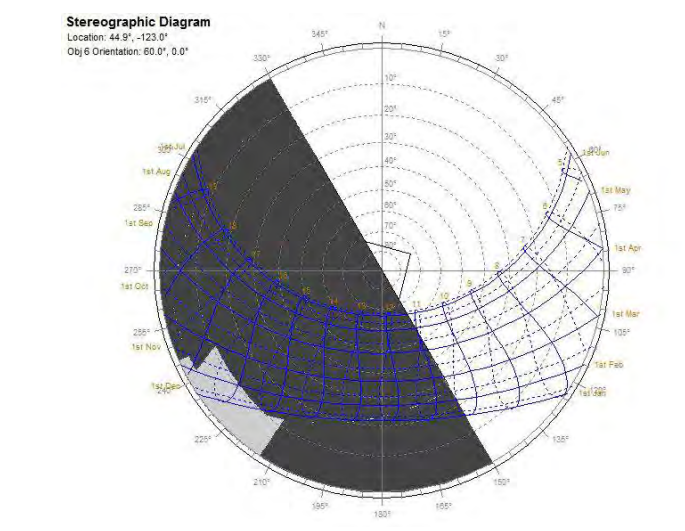
Southeast Clerestory Window



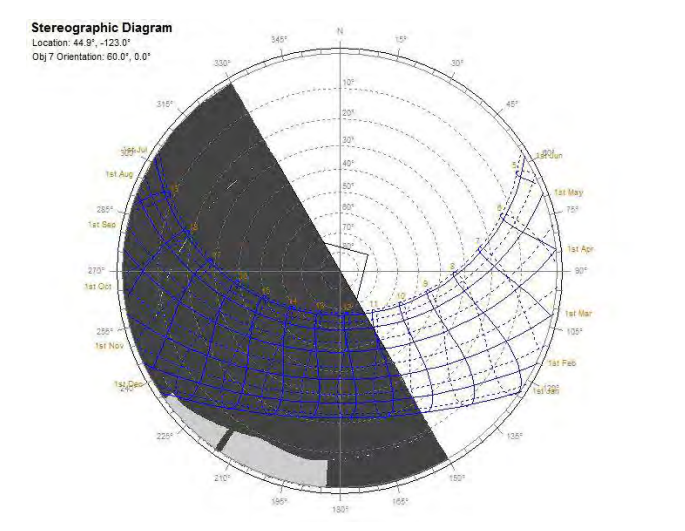
West Tower North Window



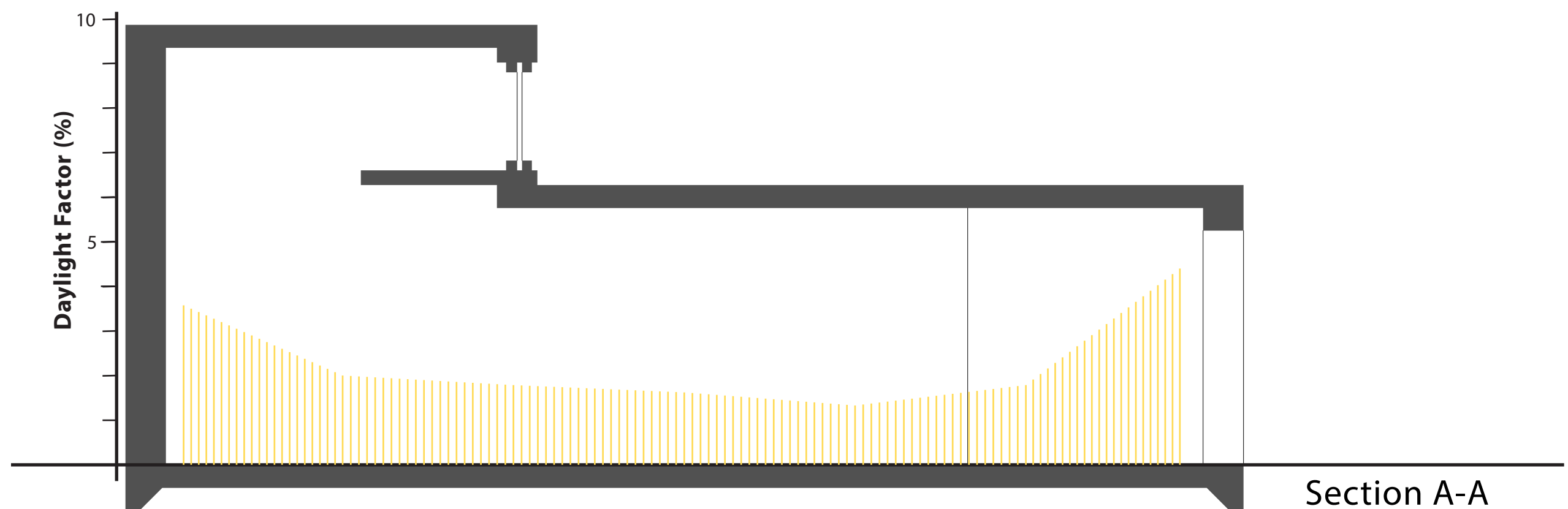
East Tower South Window



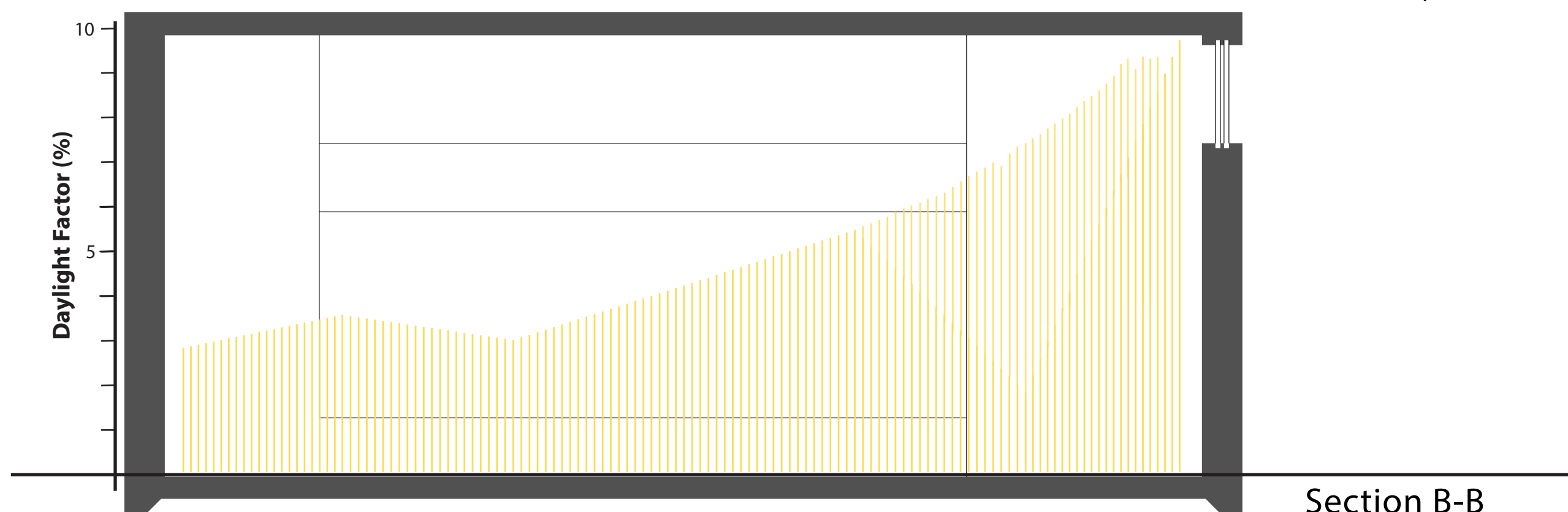
East Tower North Window (Left)



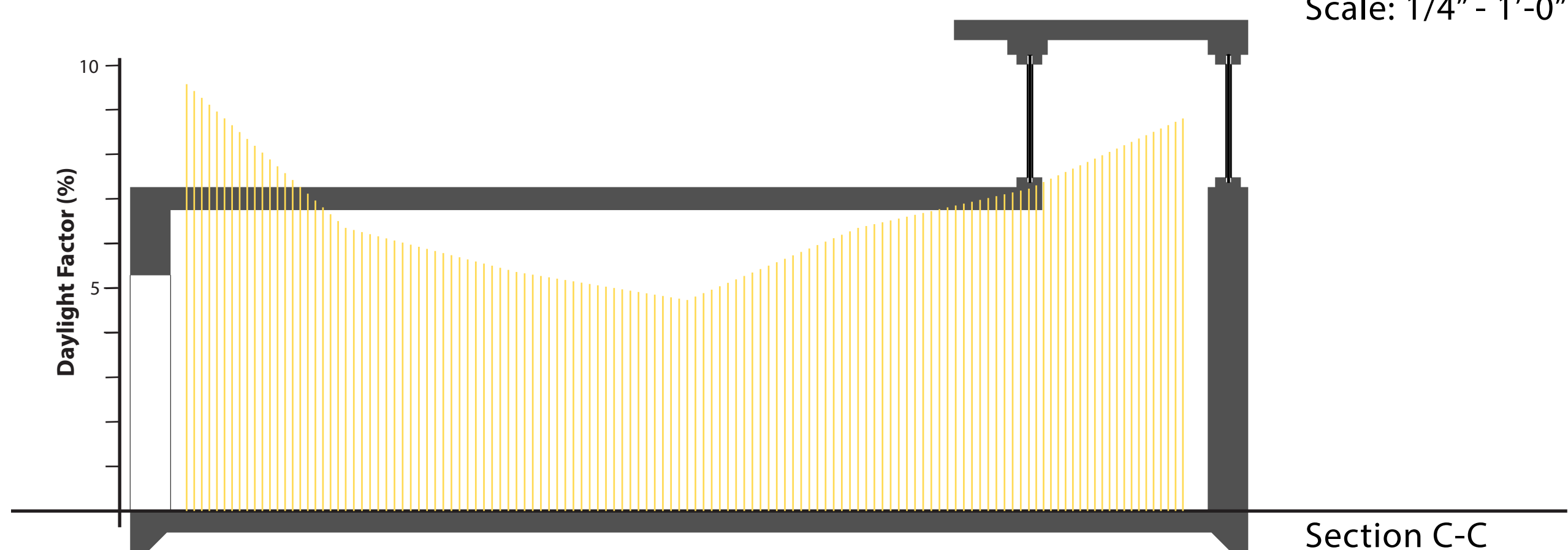
East Tower North Window (Right)



Section A-A
Scale: 1/4" - 1'-0"



Section B-B
Scale: 1/4" - 1'-0"



Section C-C
Scale: 1/4" - 1'-0"

Interior Lighting Analysis PICTURES

