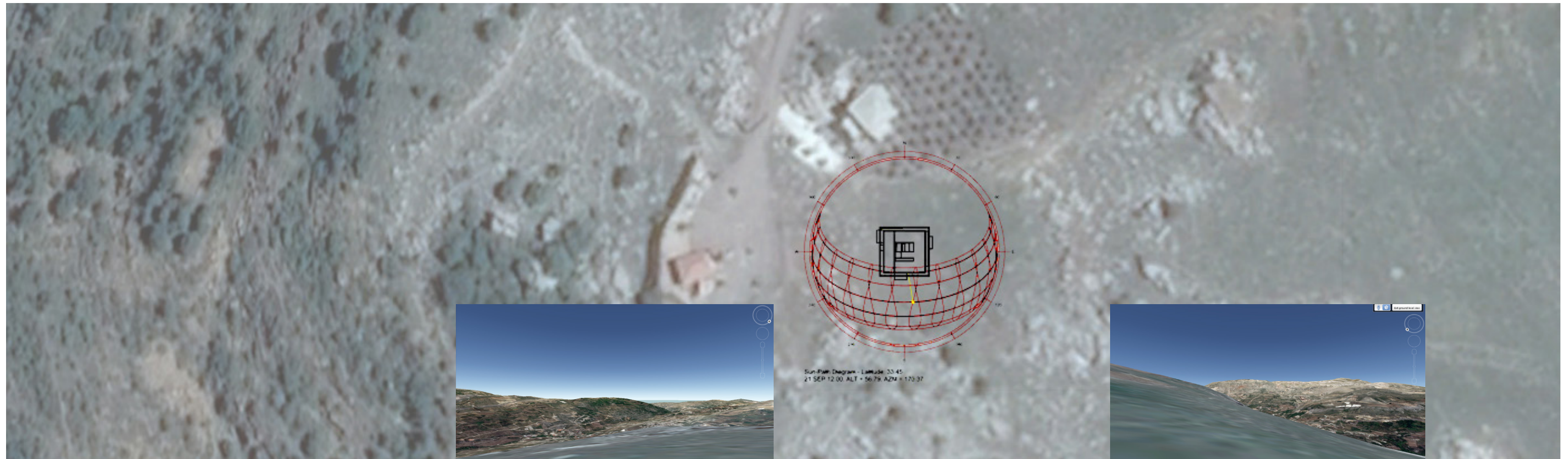
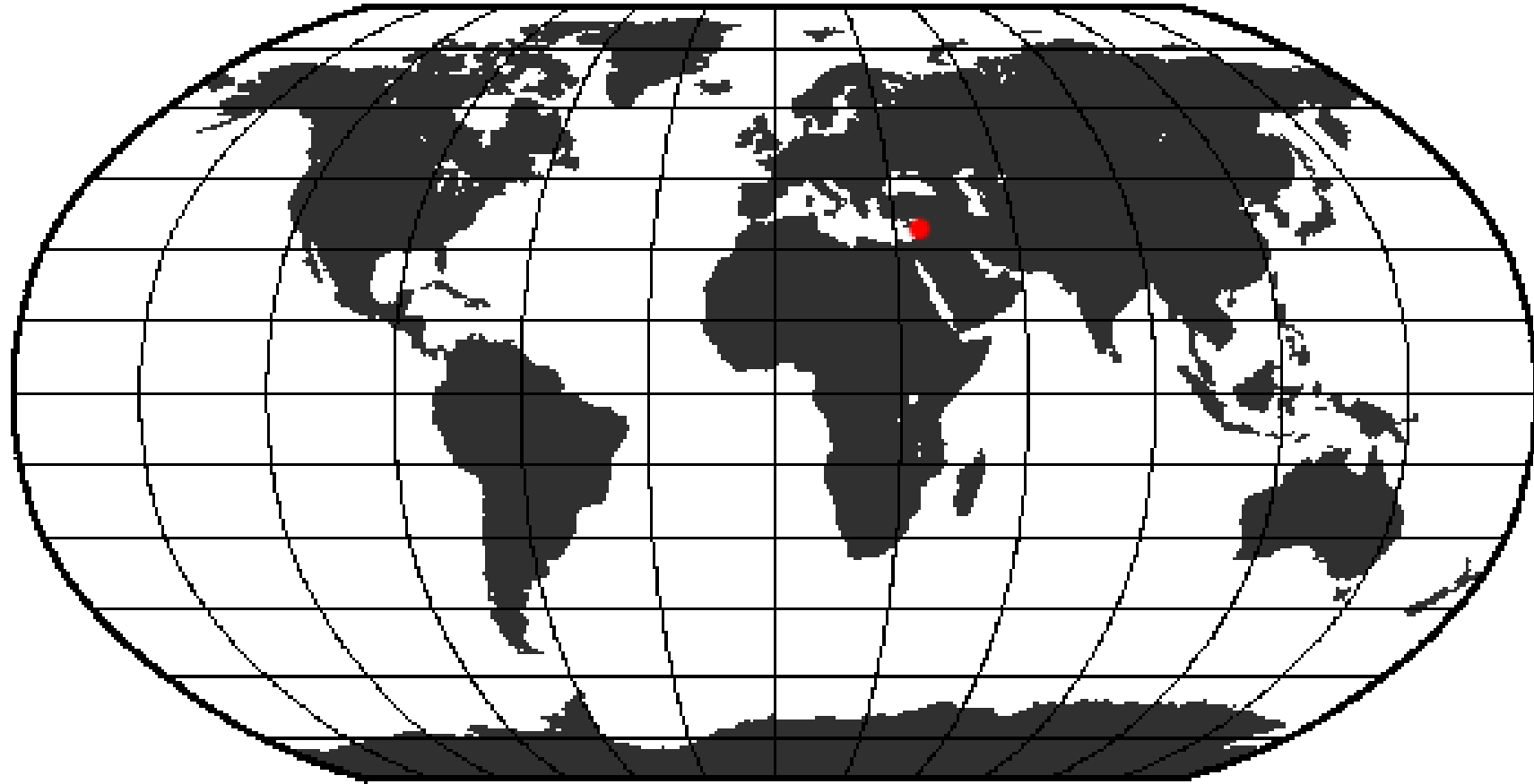


Architecture in the Daylight | GSD | Fall 2015

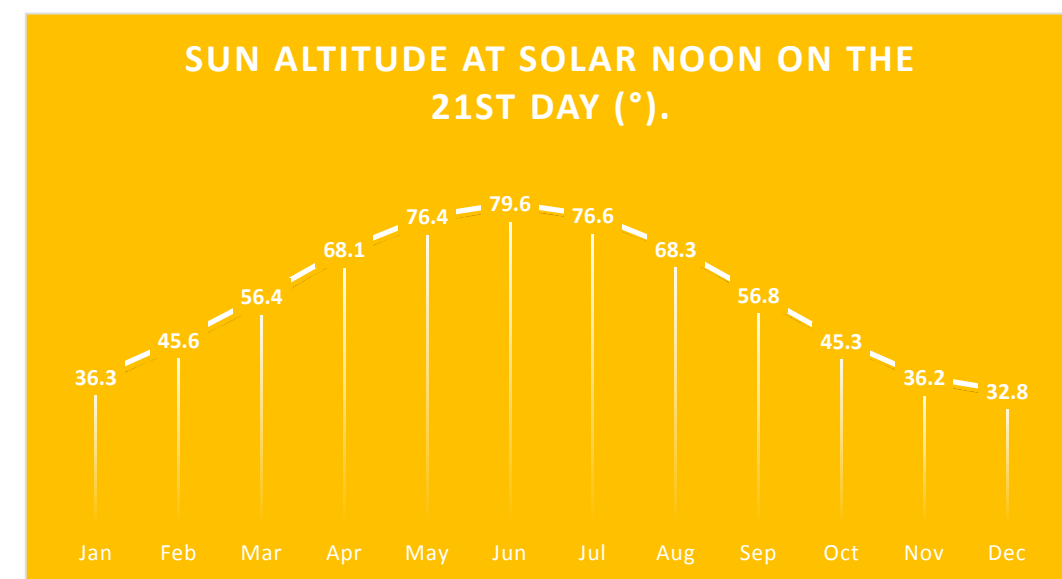
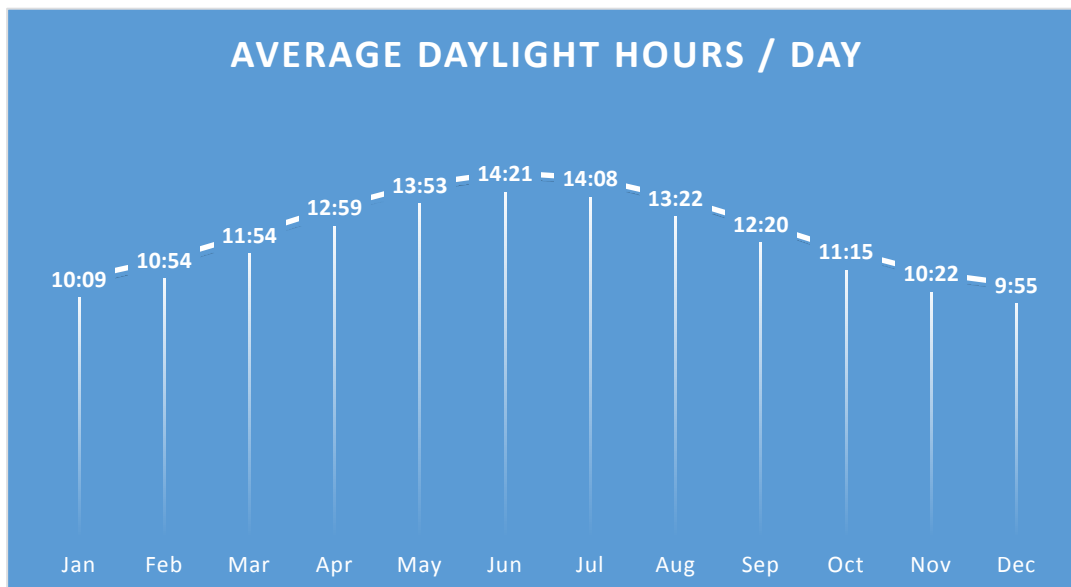
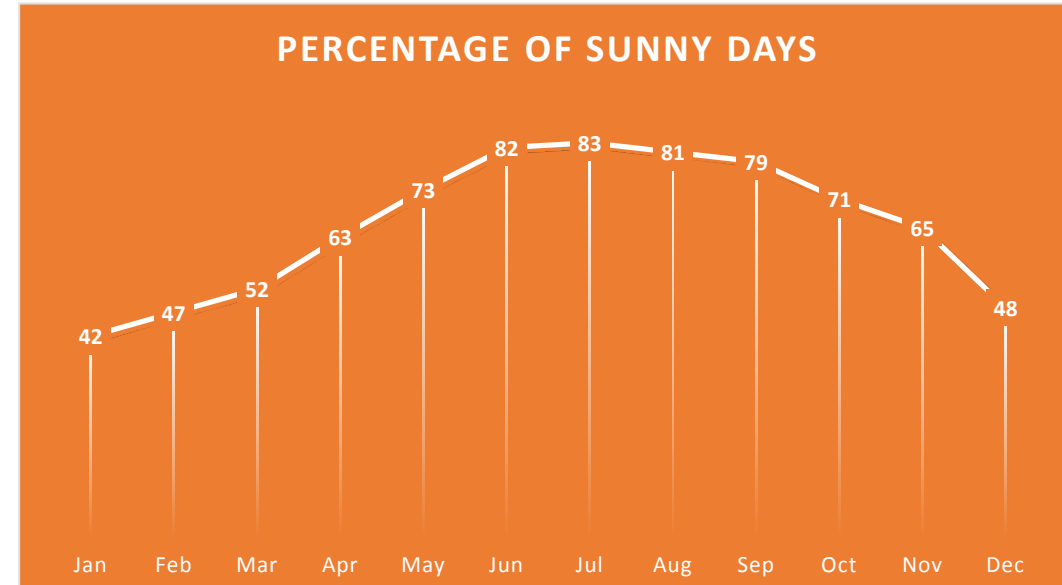
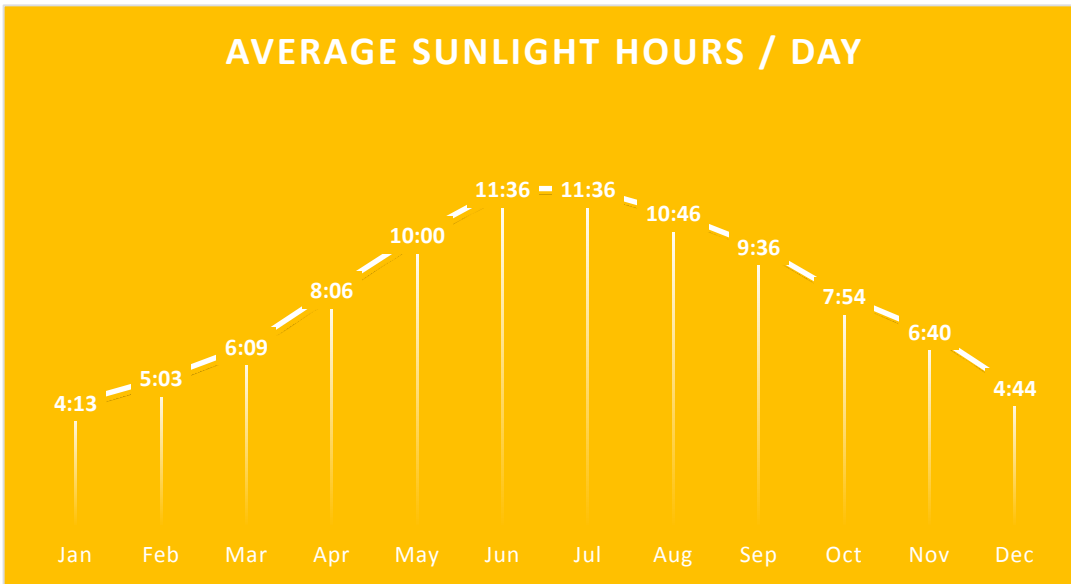
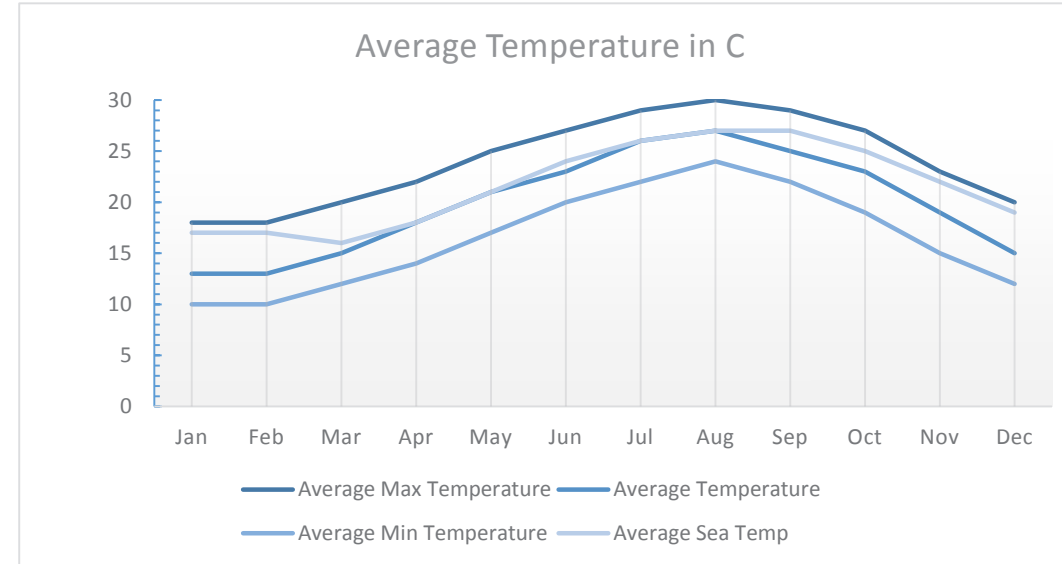
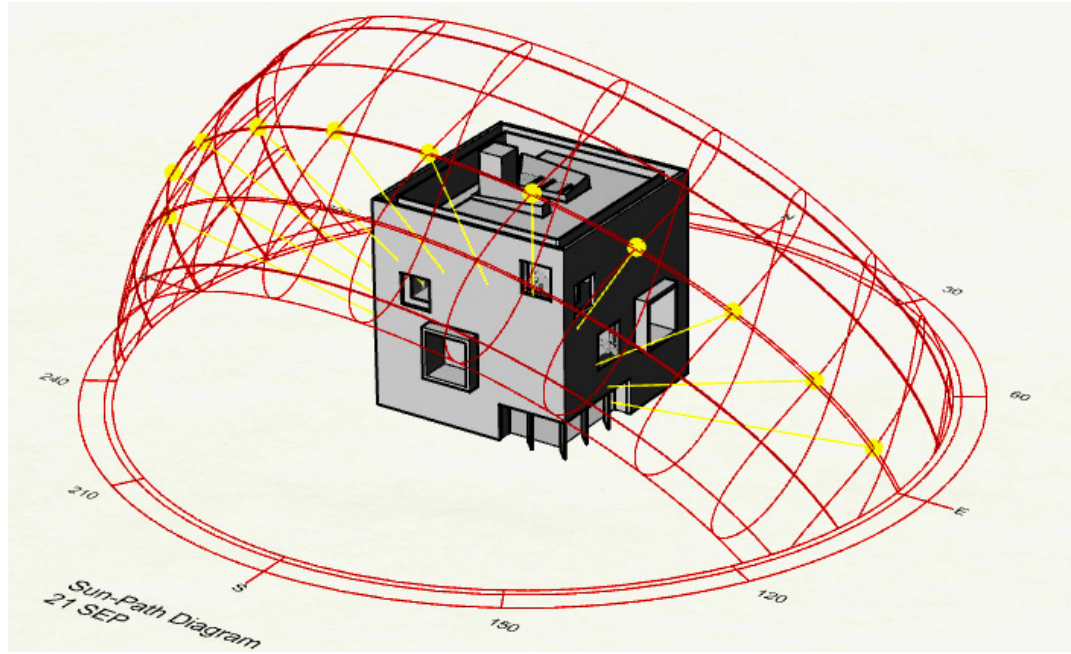
Aziz Joseph Barbar | MDes Tech '16

Site and Location

33.9N

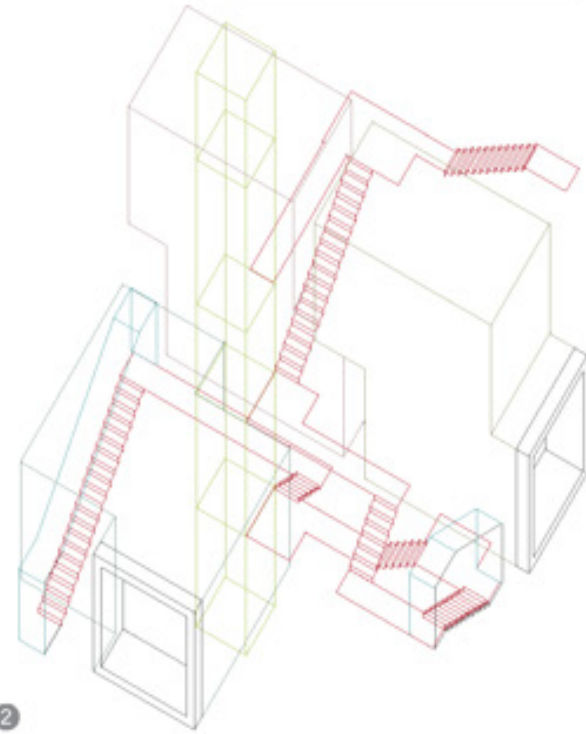


Climate Analysis



House For 3 Brothers

Summer 2012 - Location: Chuf, Lebanon - Project Footprint: 256sqm

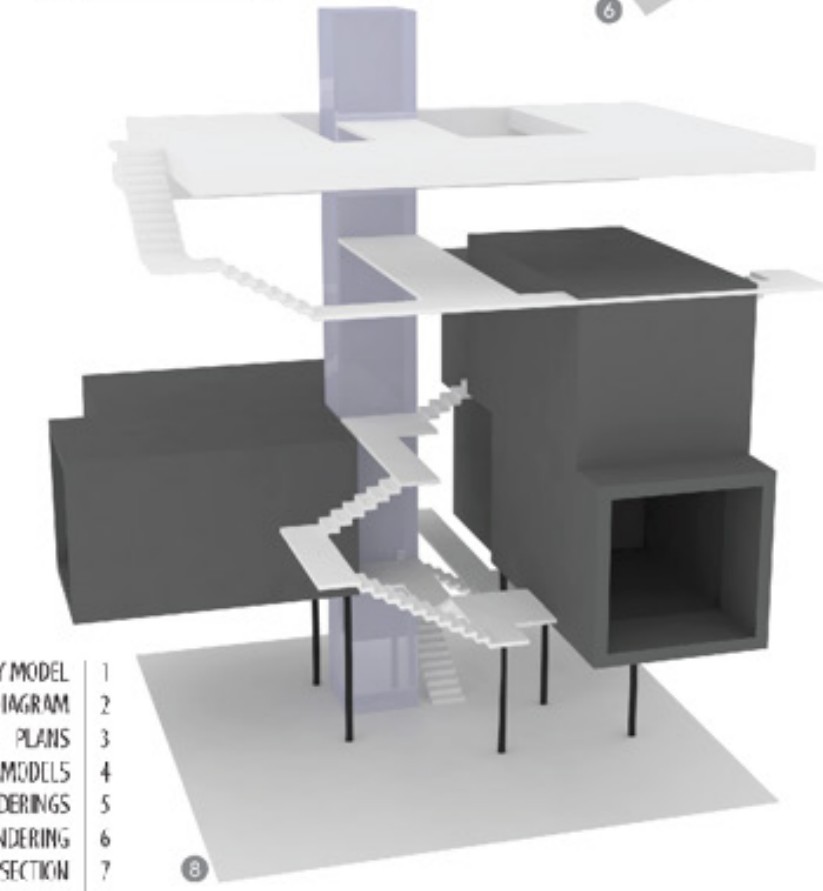
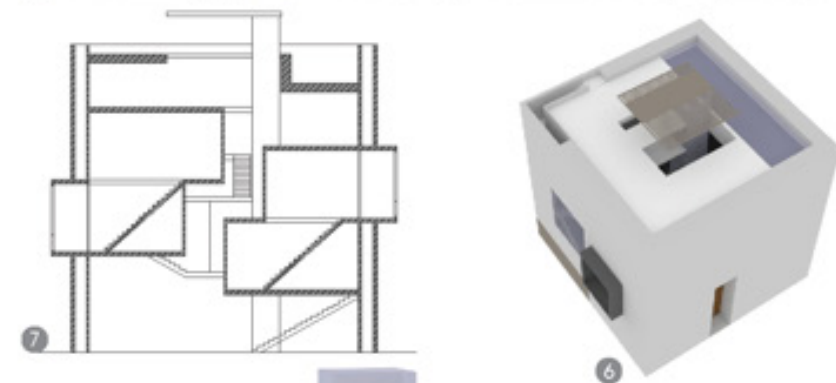
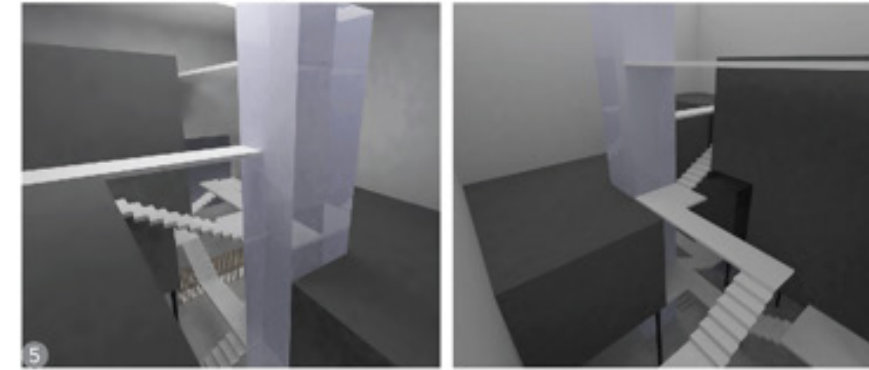
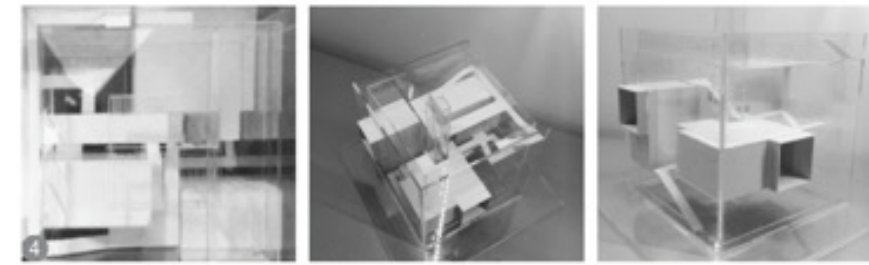


This house for three brothers offers a unique way of communal living similar to traditional Lebanese architecture that follows a central organization around a communal hall. This relationship however is taken into three dimensions as each "private quarter" floats independently inside a 16mx16mx16m cube. The ground floor including the roof space of each unit are utilized as communal spaces creating unique introverted interactions between the various levels.

Project Team: Joe Geitani & Aziz Barbar

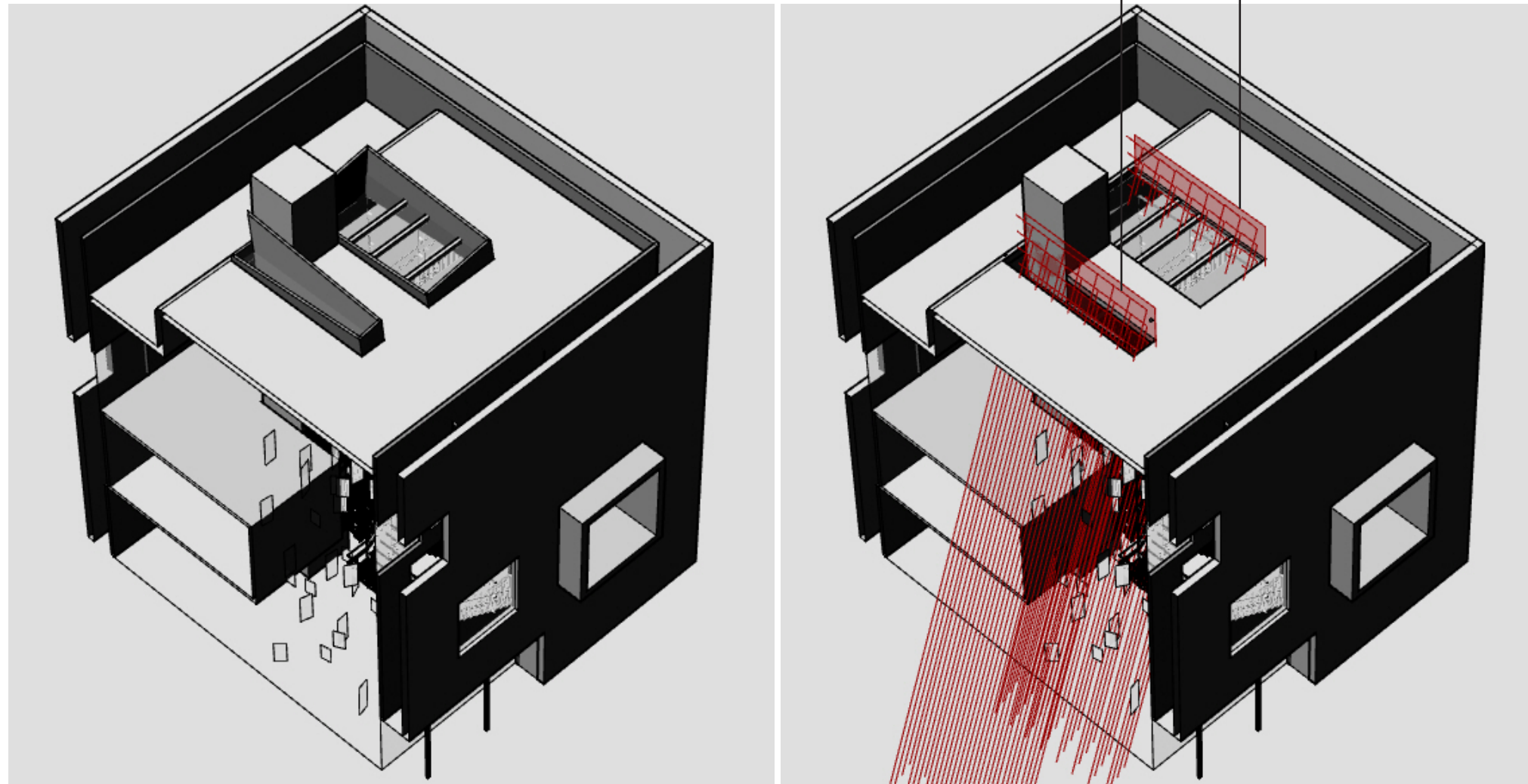
Personal Input:

- Contributed to all aspect of the design narrative and theory.
- Developed the conceptual design through several proposals.
- Developed the project's circulation.
- Developed in detail the three units within the project.
- Developed a set of drawings including plans and sections.
- Conducted preliminary studies on the elevations and envelope.
- Constructed several digital and physical models.



- STUDY MODEL | 1
- CONCEPT DIAGRAM | 2
- PLANS | 3
- STUDY MODELS | 4
- INTERIOR RENDERINGS | 5
- RENDERING | 6
- SECTION | 7
- INTERIOR ELEMENTS | 8

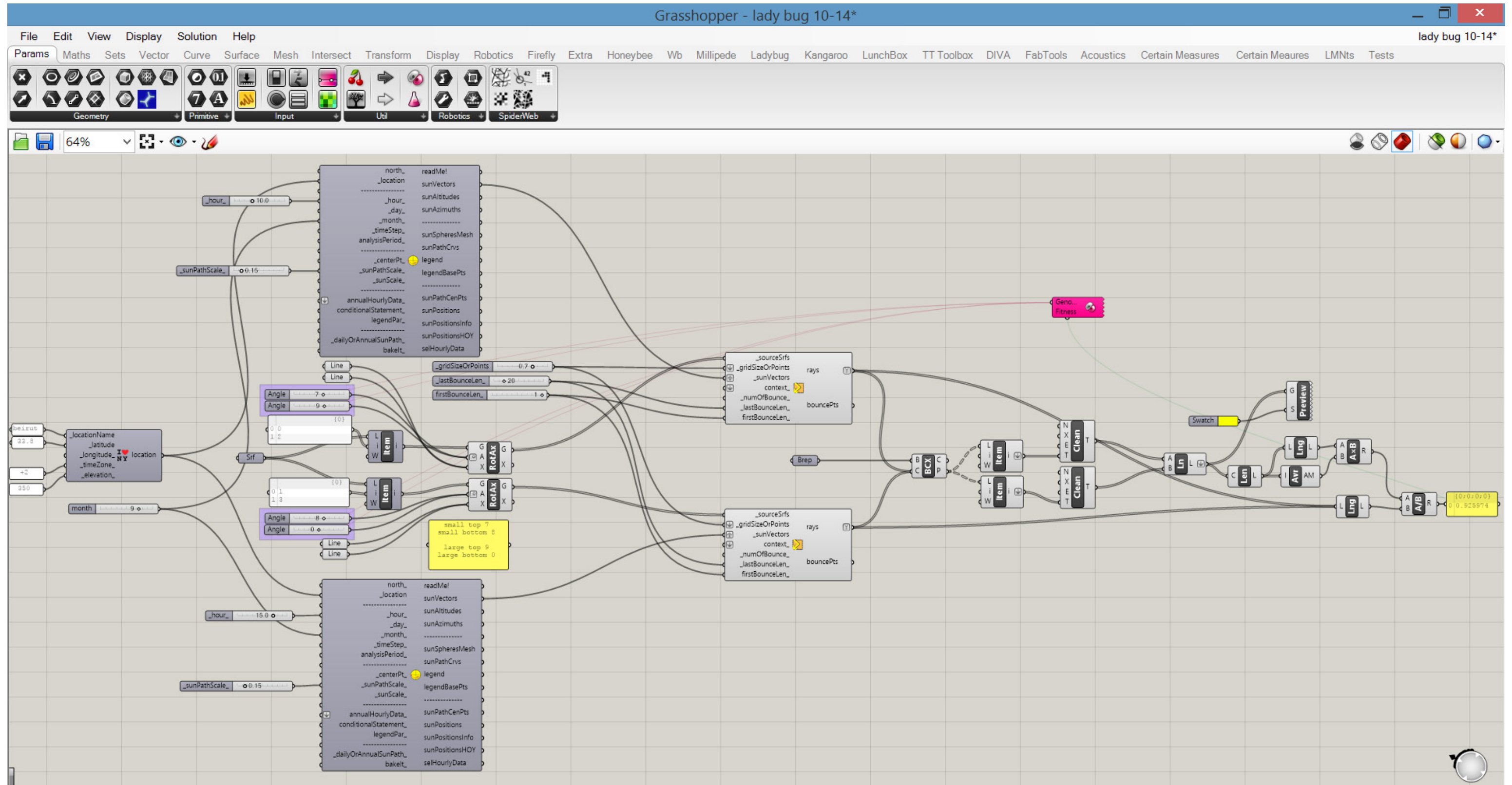
Skylight



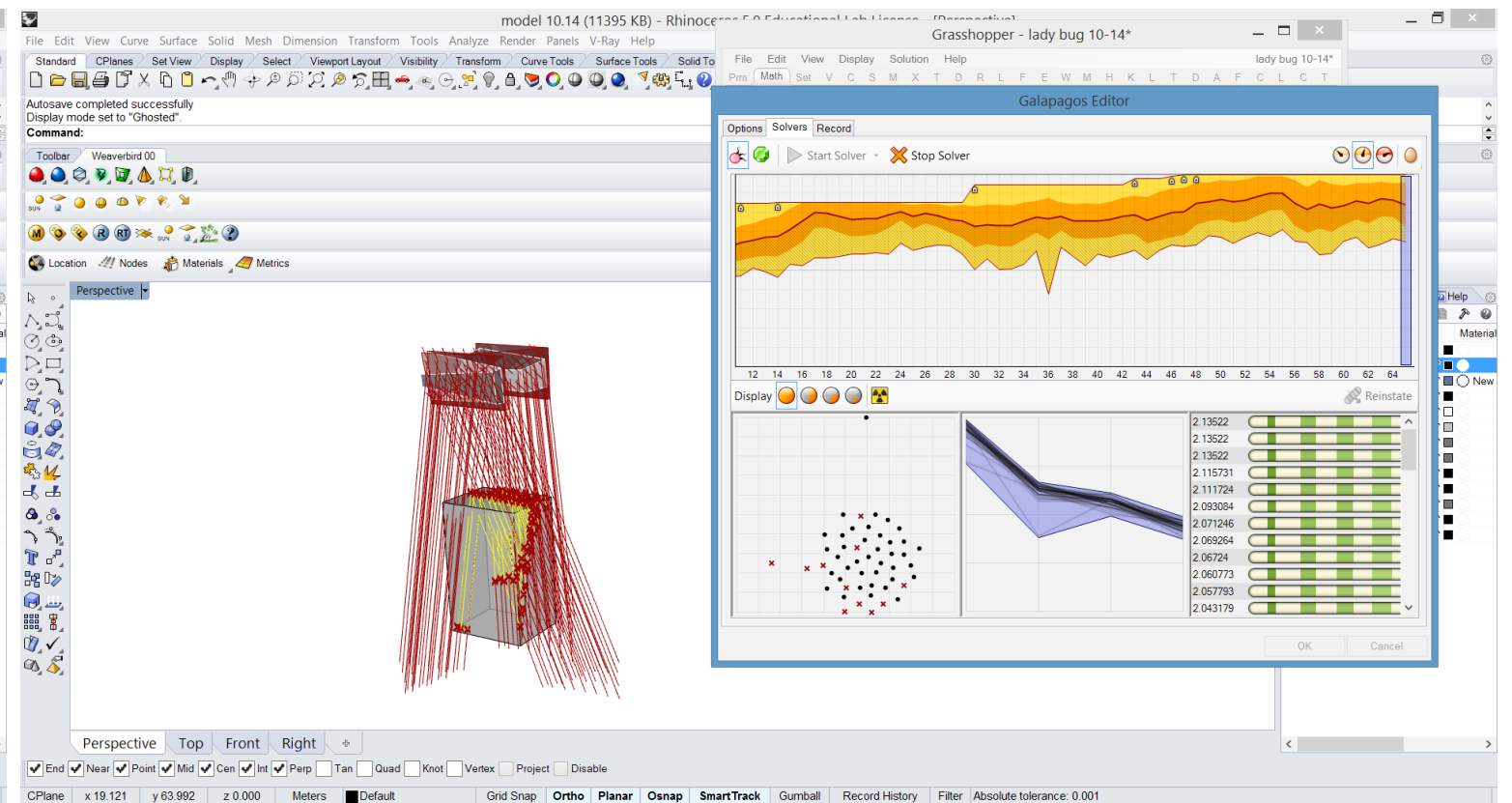
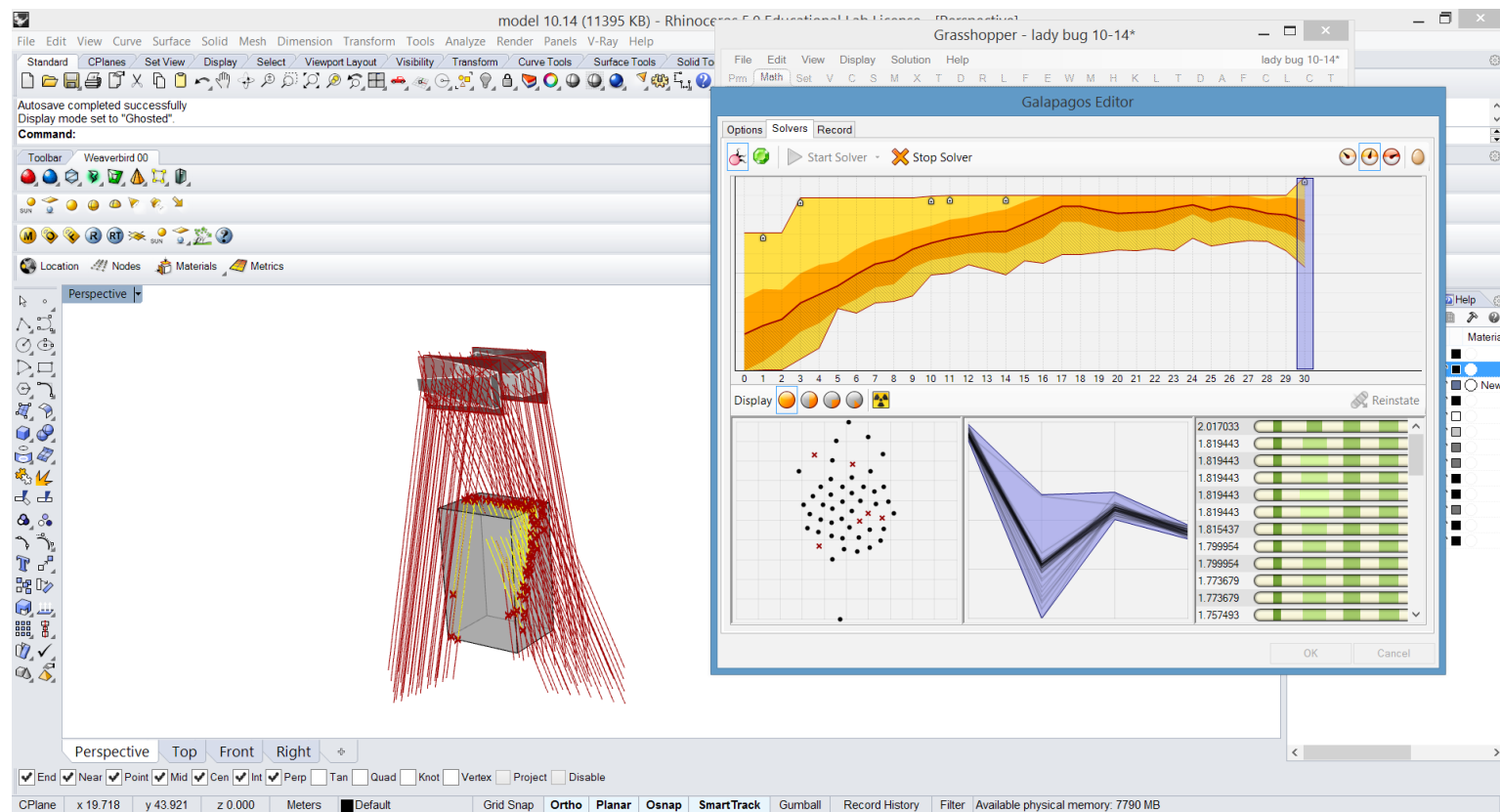
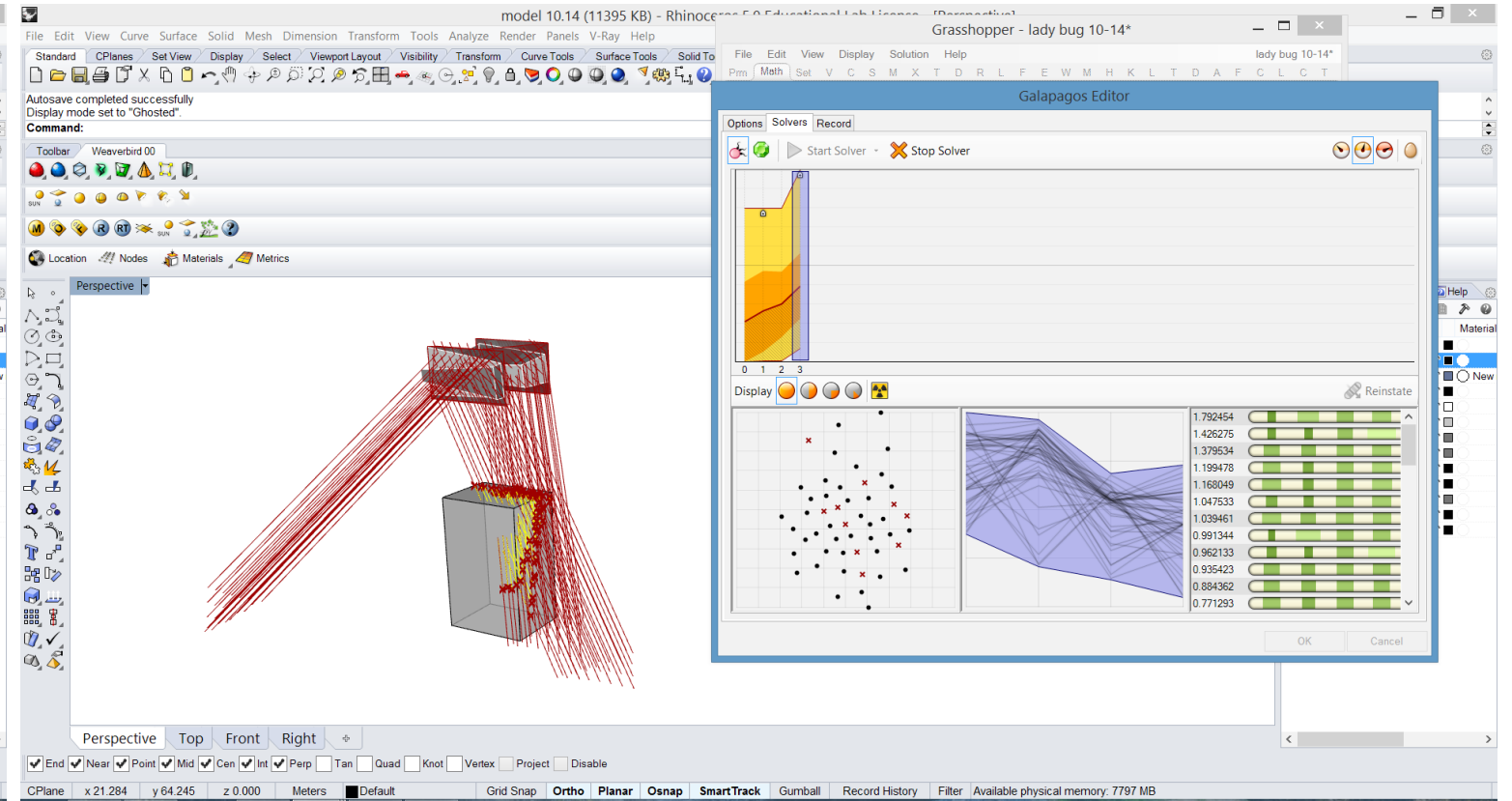
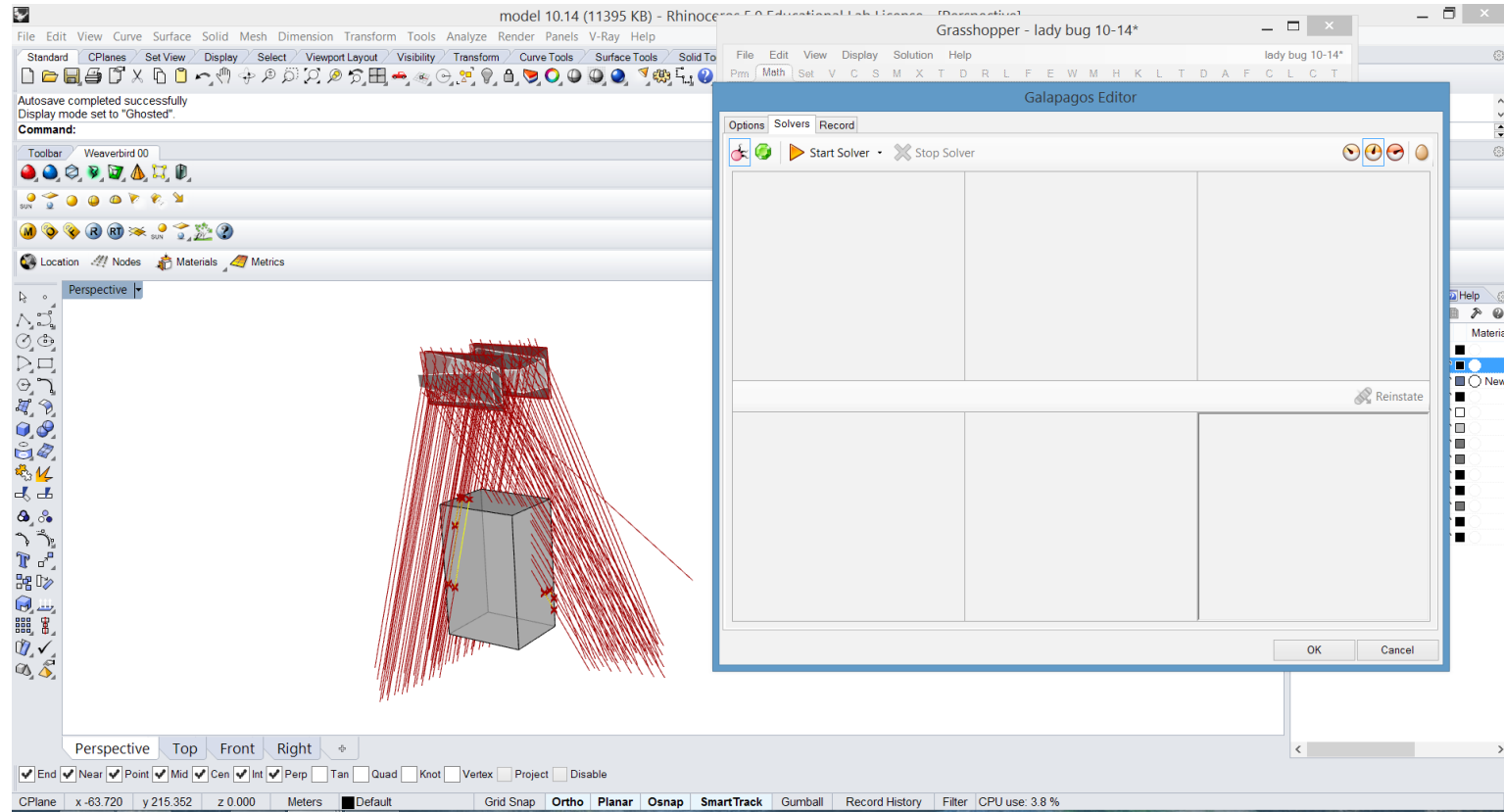
OBJECTIVE: INCREASE AMOUNT LIGHT BOUNCING OFF SKYLIGHT AND PASSING THROUGH THE MAIN ATRIUM

Skylight Optimization

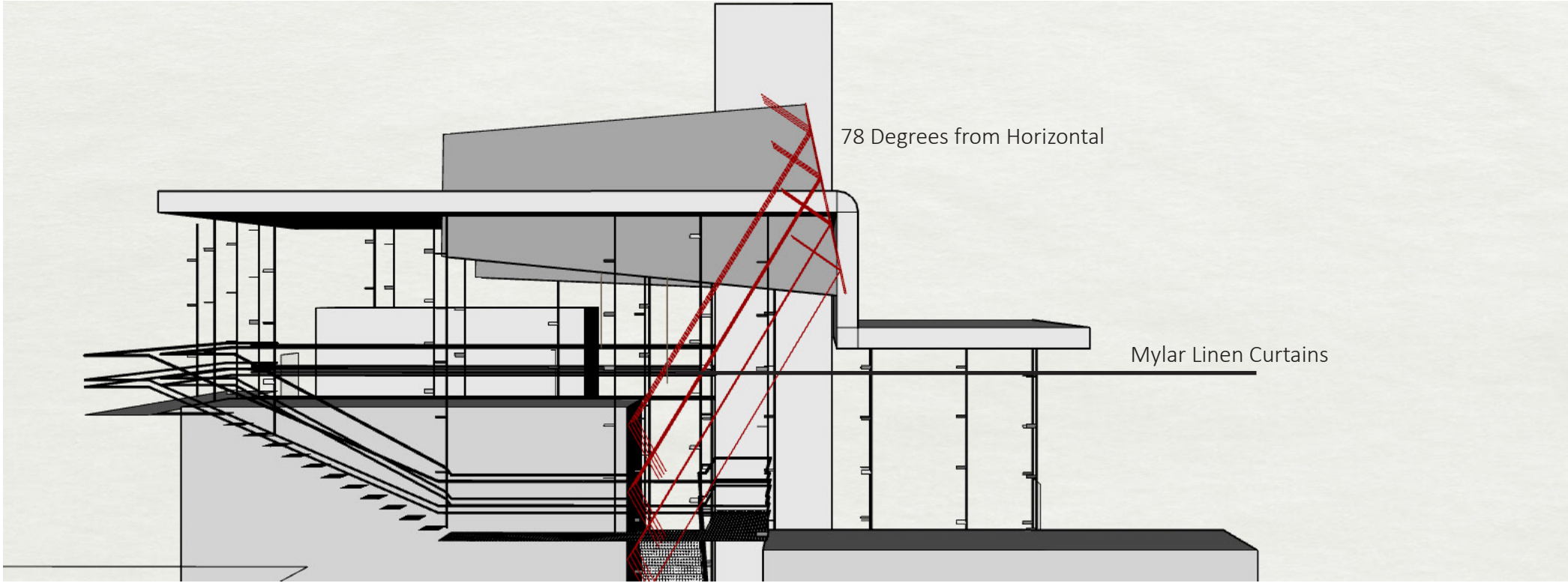
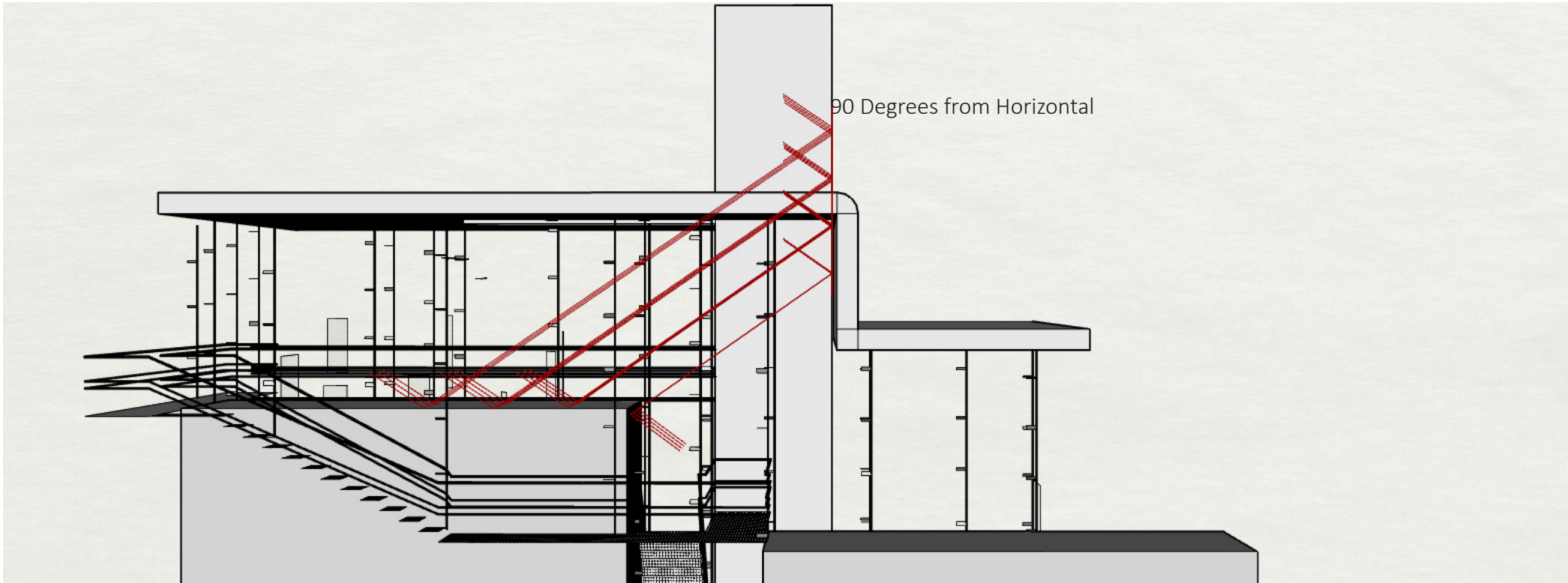
Grasshopper: LadyBug + Galapagos



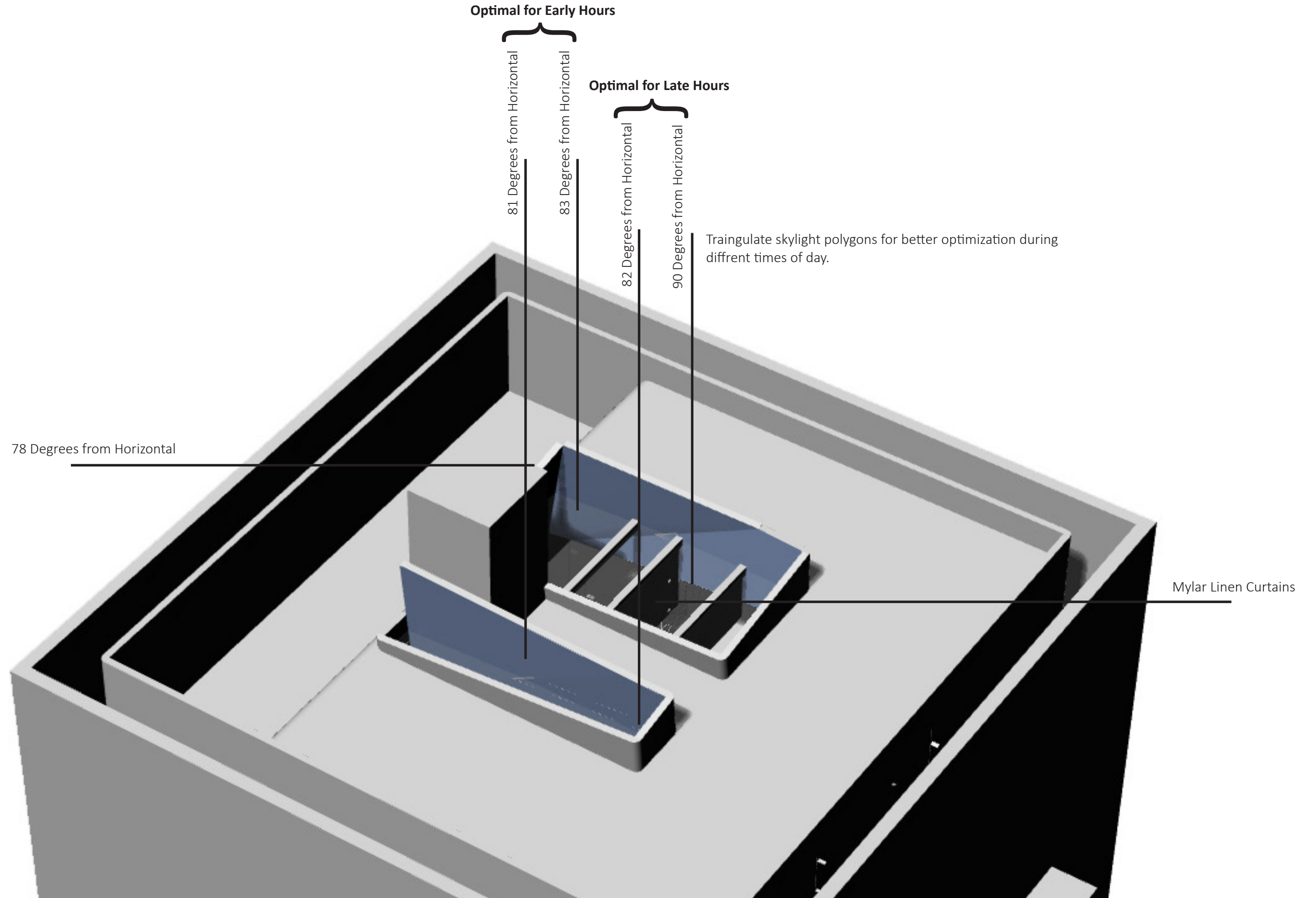
Skylight Optimization



Skylight



Skylight



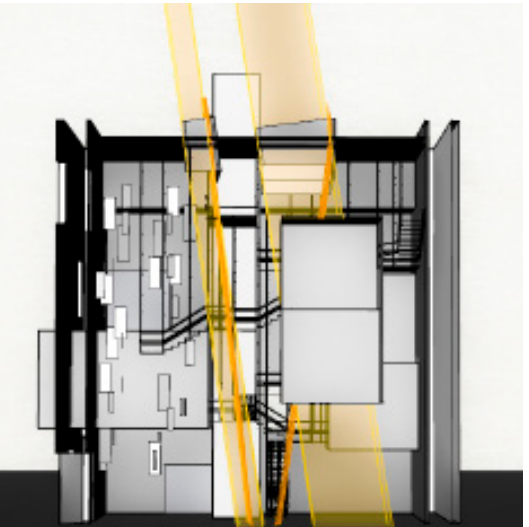
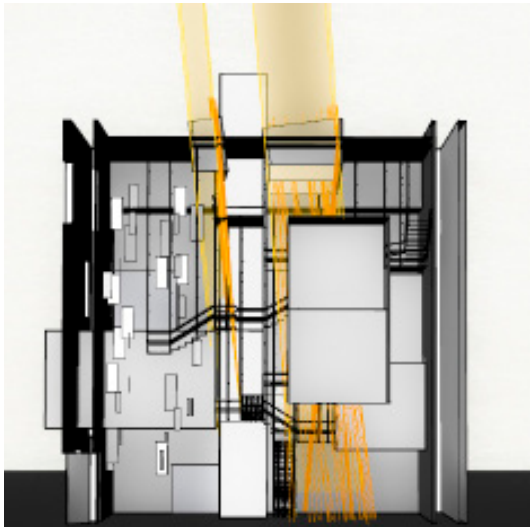
Sun Ray Trajectory (east view)

10 AM

12 PM

2 PM

Jun 21



Sep 21



Dec 21



Sun Ray Trajectory (south view)

8 AM

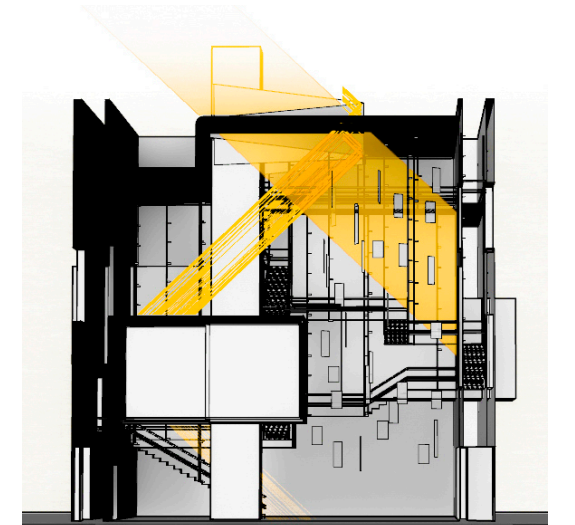
10 AM

12 PM

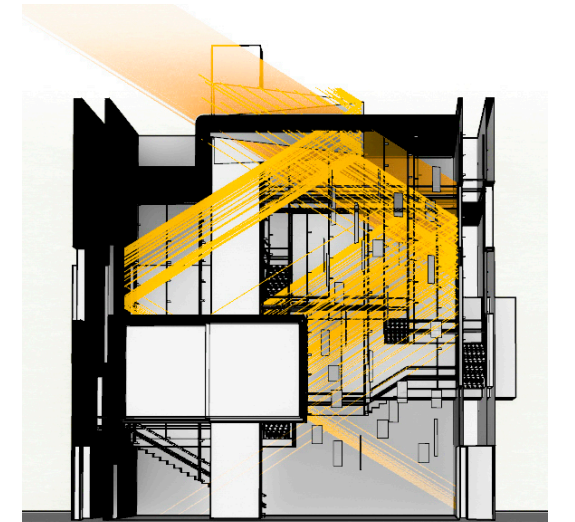
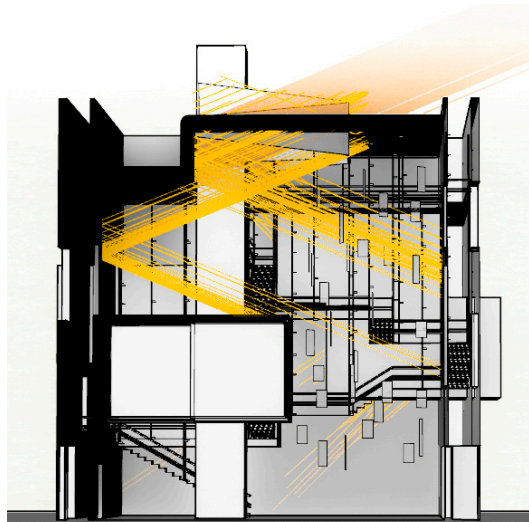
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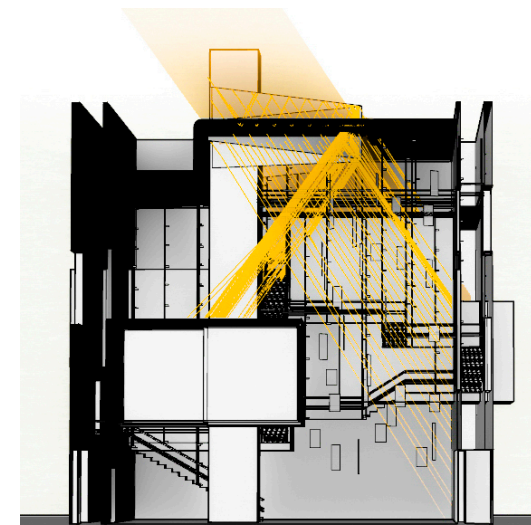
Jun 21



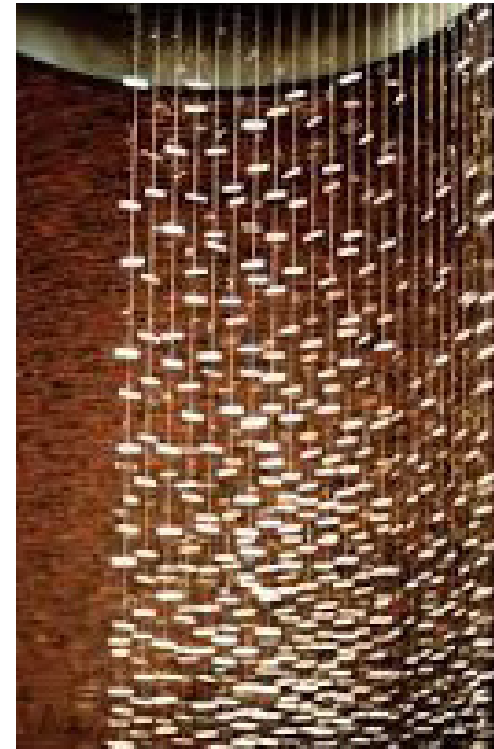
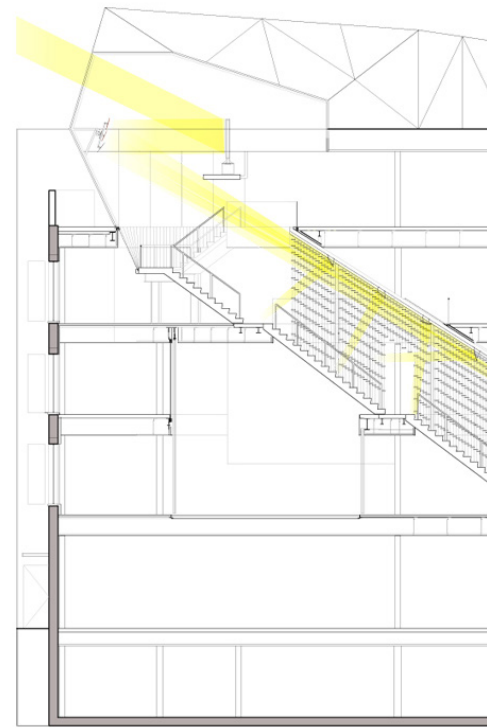
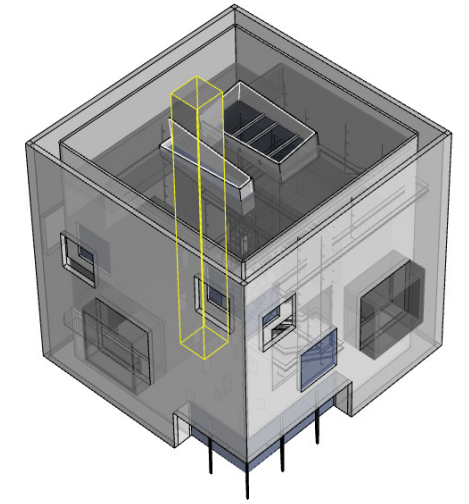
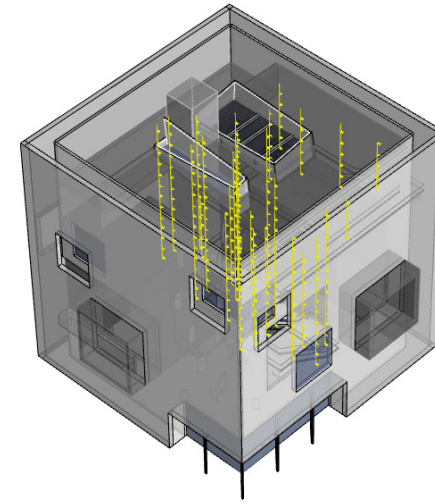
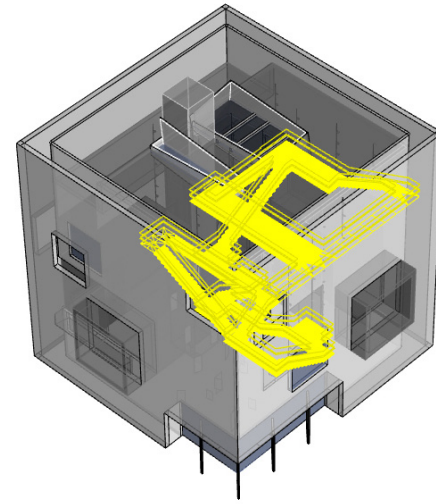
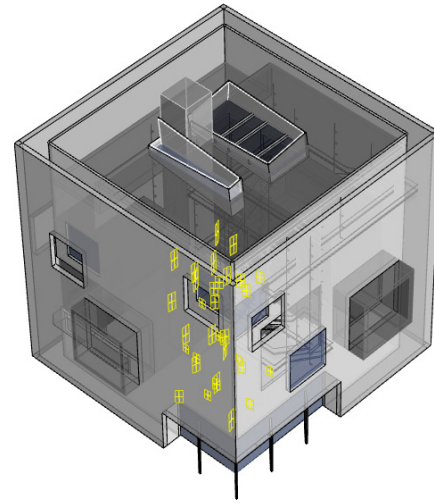
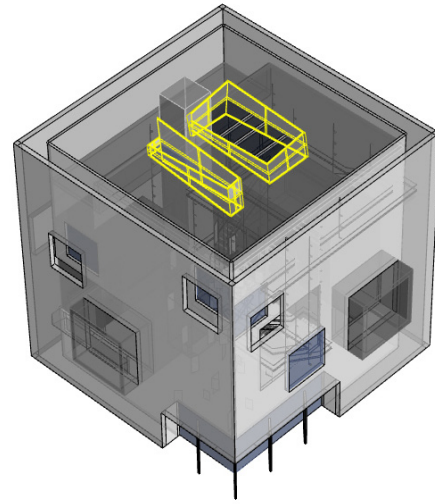
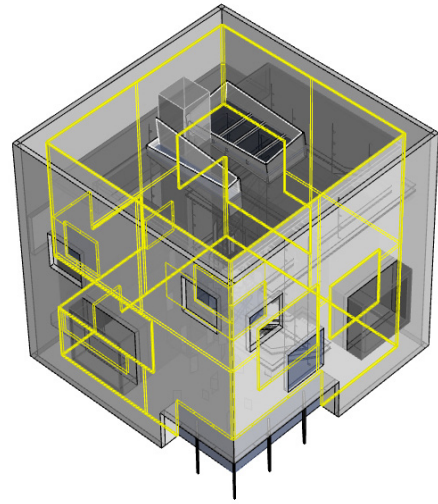
Sep 21



Dec 21



Daylight Elements



Thick Double Wall

Mirror Skylight

Hanging Mylar Linen

Perforated Steel Stair

Hanging Steel Reflectors

Elevator As Lightwell

Use an offset between the two surfaces to expand views and increase shading and light filtration.

Set skylight angles to direct sun rays into desired locations inside the space.

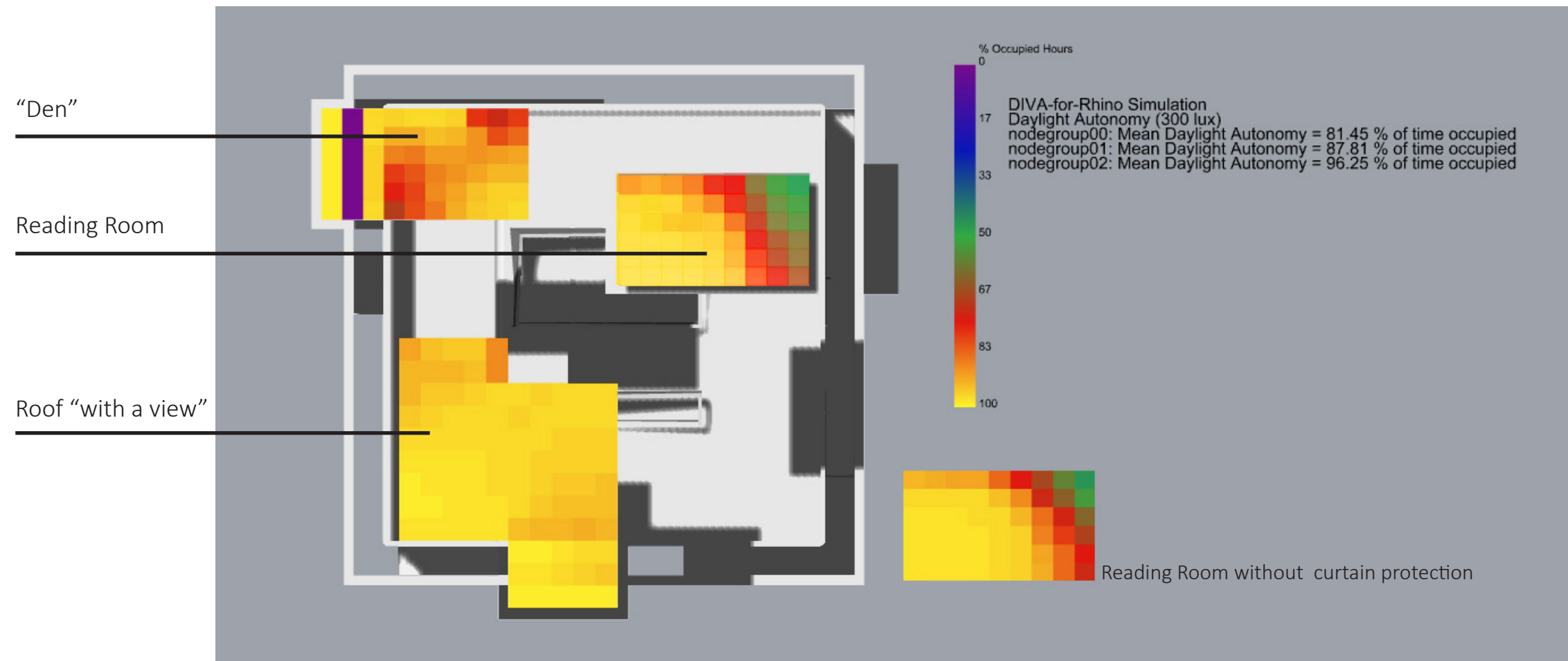
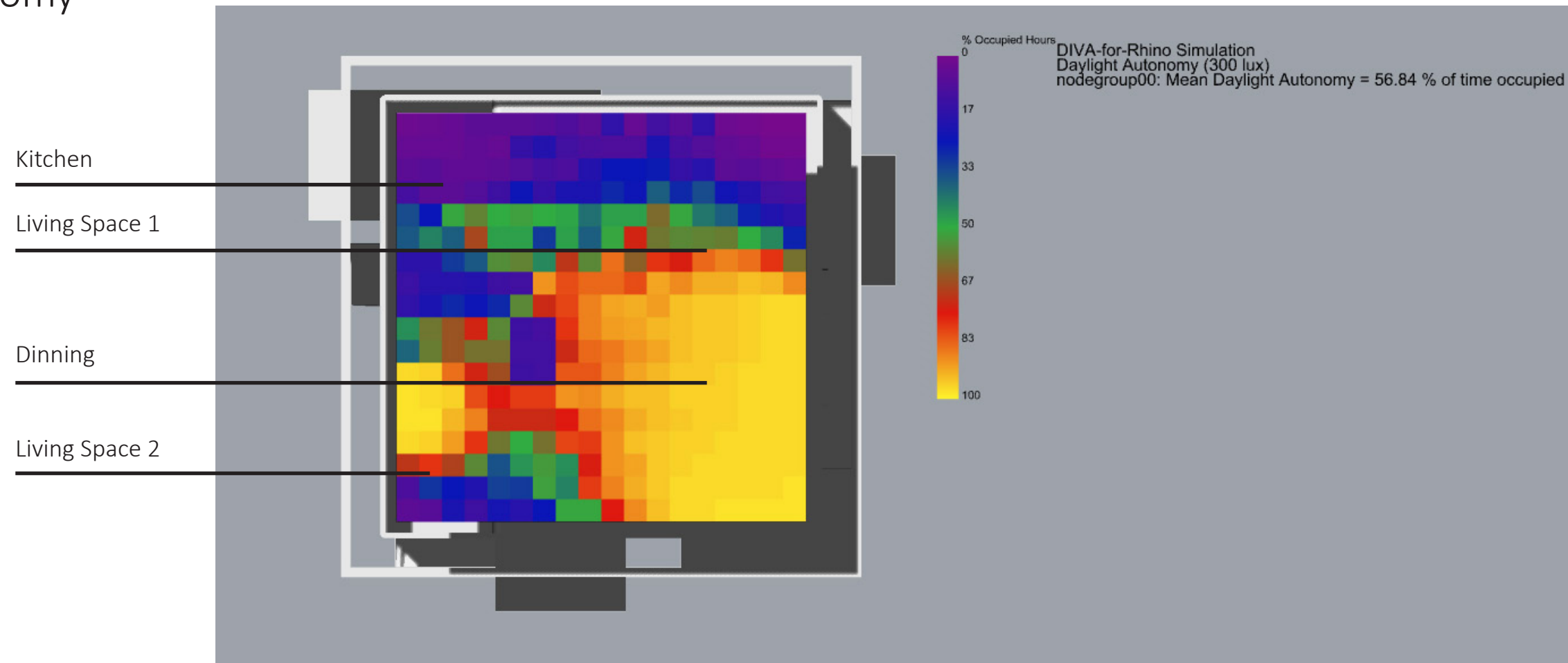
Hanging sheets of mylar for acoustical purposes while reflecting and dispersing light around the space.

Light steel construction for a dematerialized effect on the staircase that allows light to penetrate through.

Place reflectors on the stair's steel tension cables to bounce light around the spaces and create playful effects.

Use the elevator shaft as a glass lightwell bringing light to the bottom of the space.

Daylight Autonomy



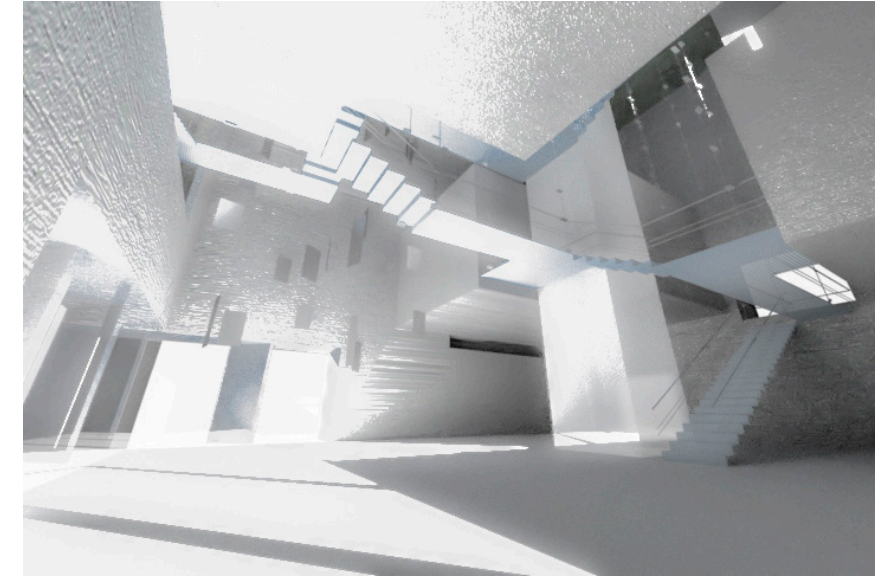
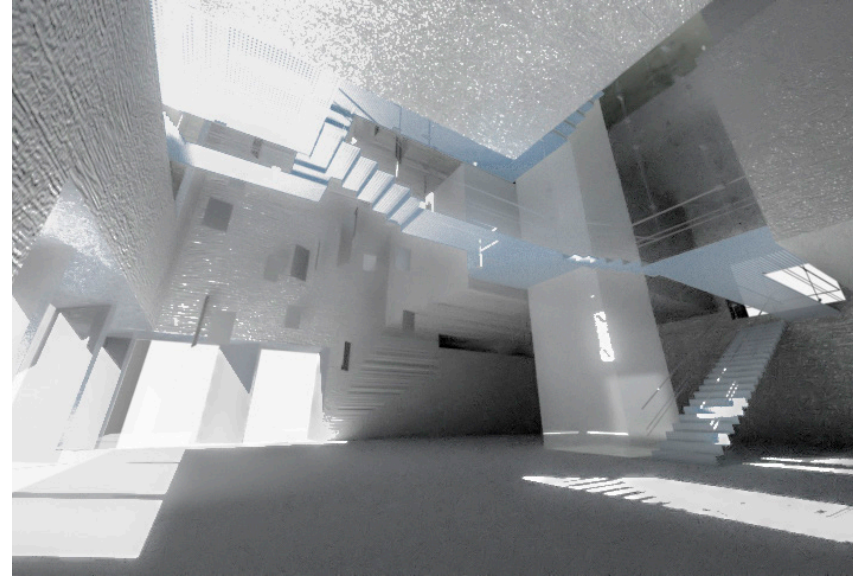
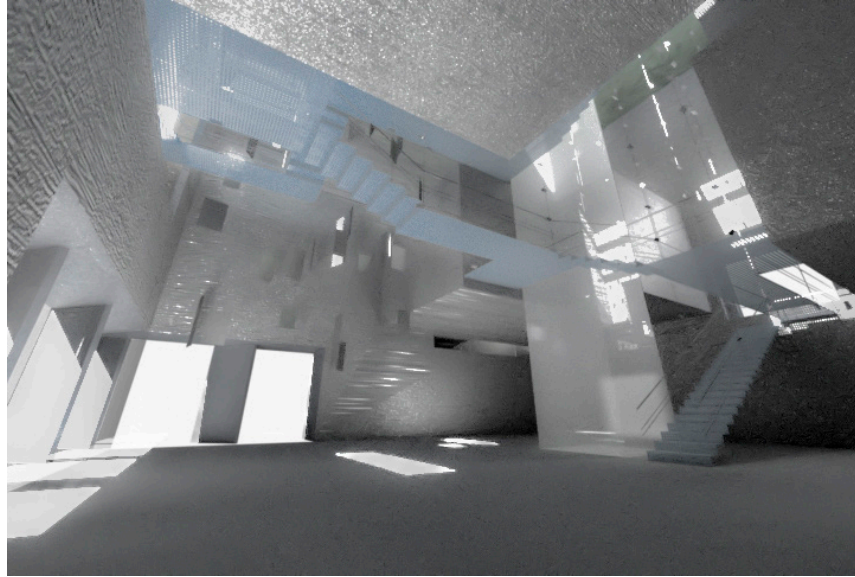
Daylight Visualizations

Jun 21

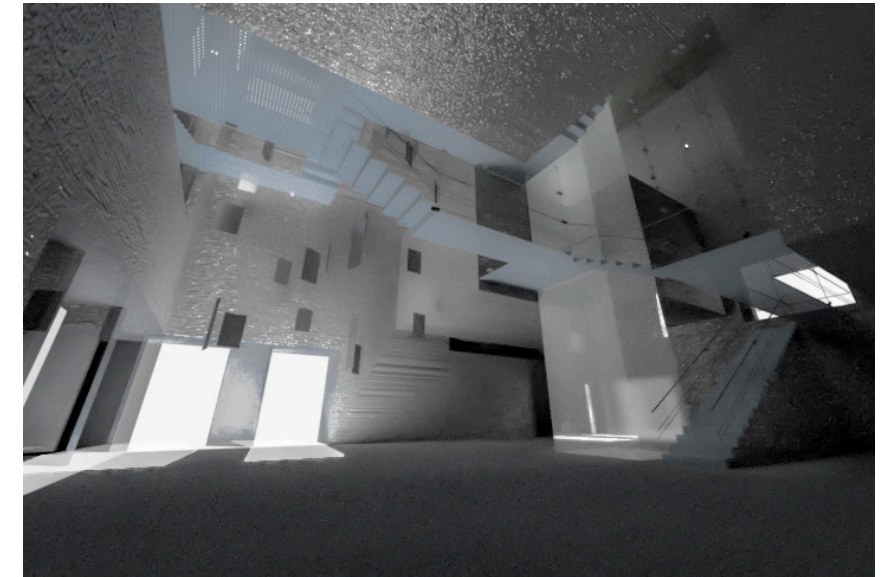
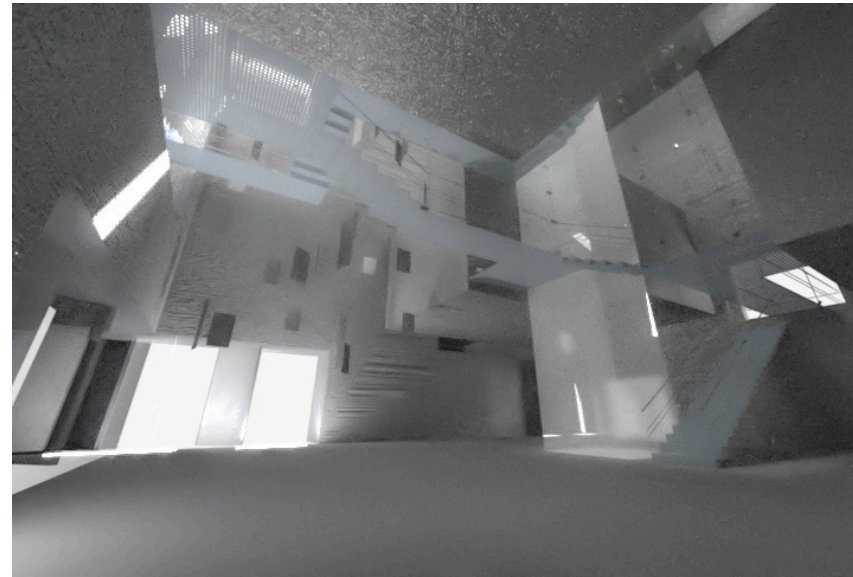
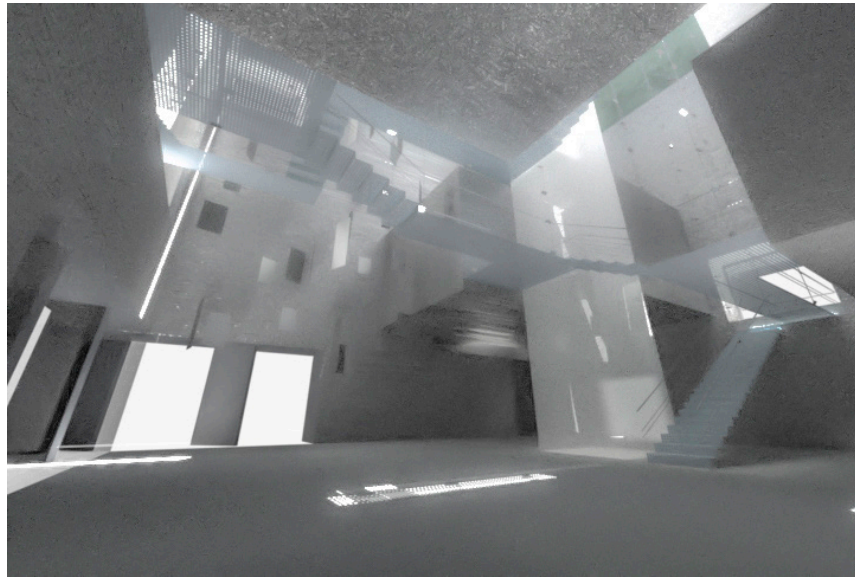
Sep 21

Dec 21

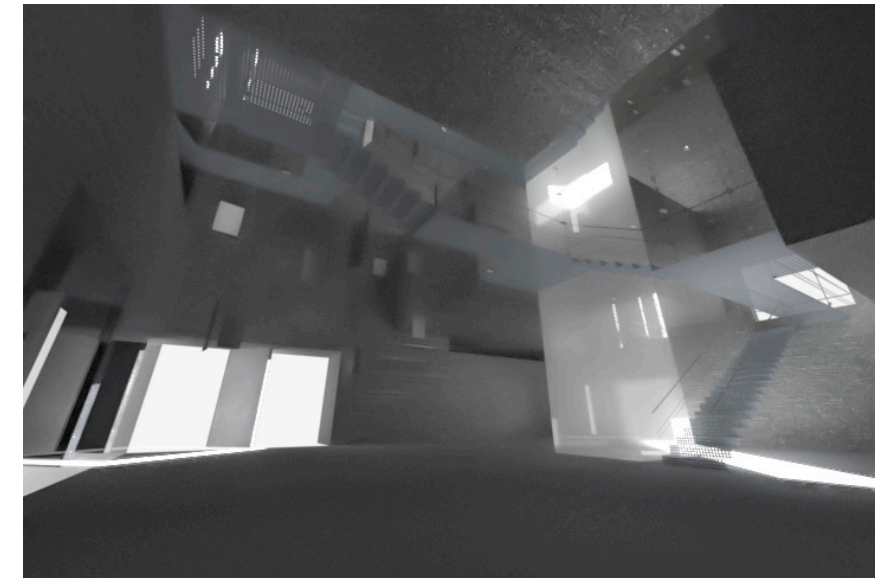
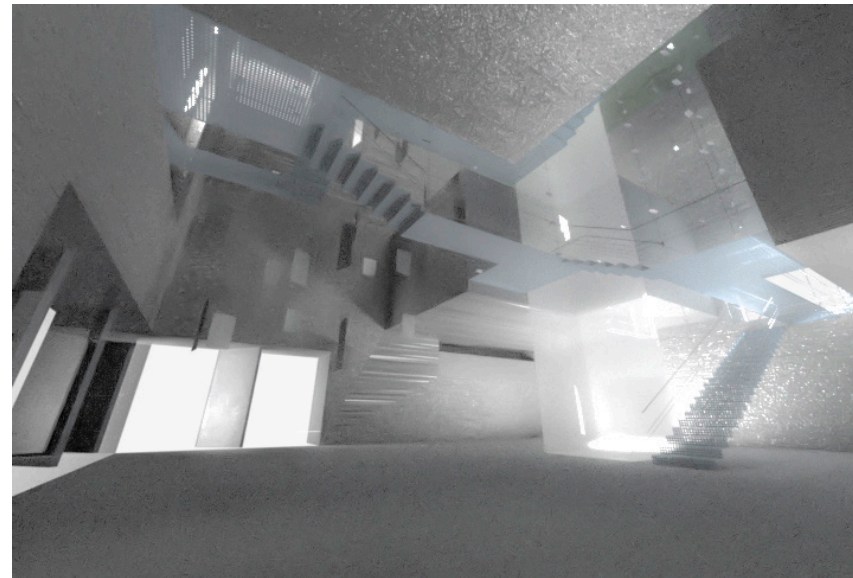
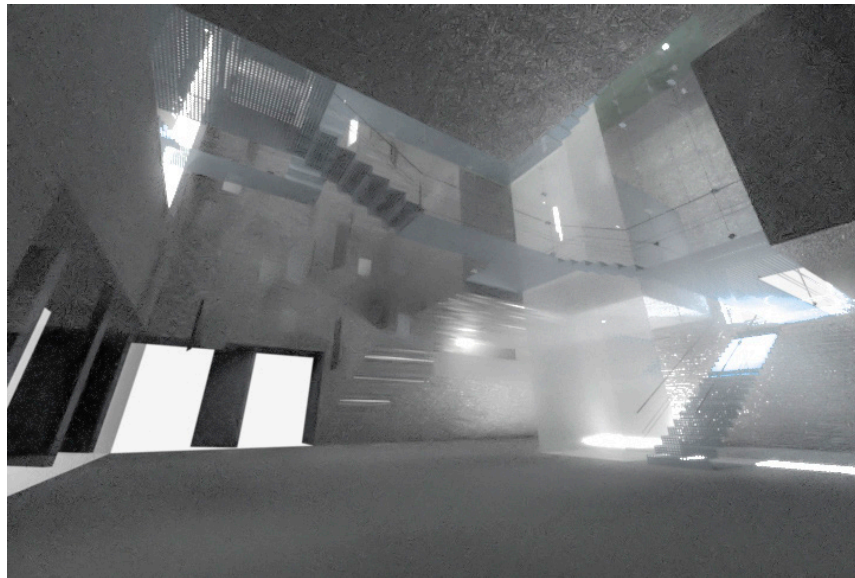
9 AM



12 PM



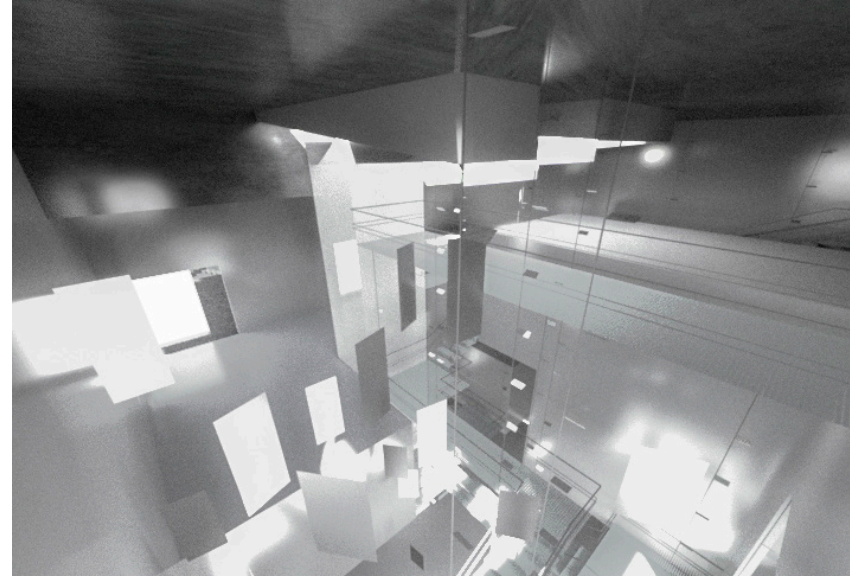
3 PM



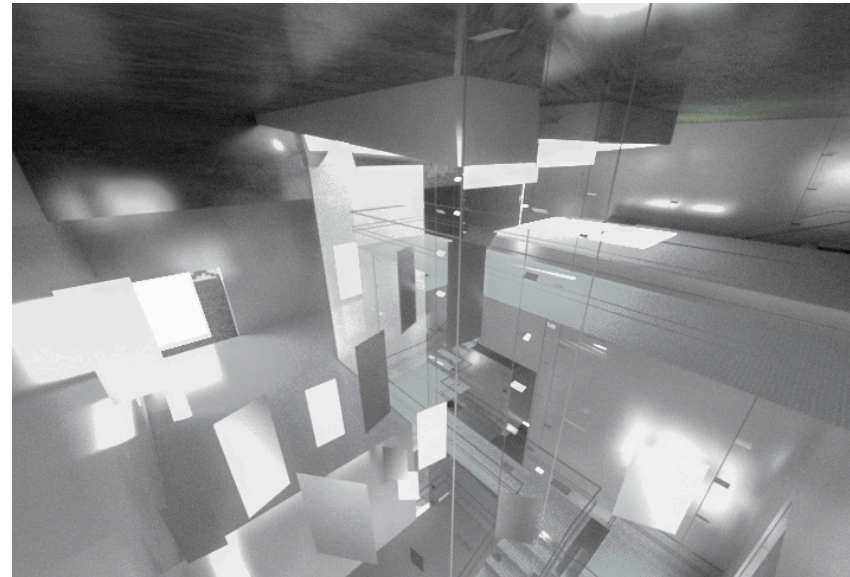
Daylight Visualizations

Sep 21

9 AM



12 PM



3 PM

