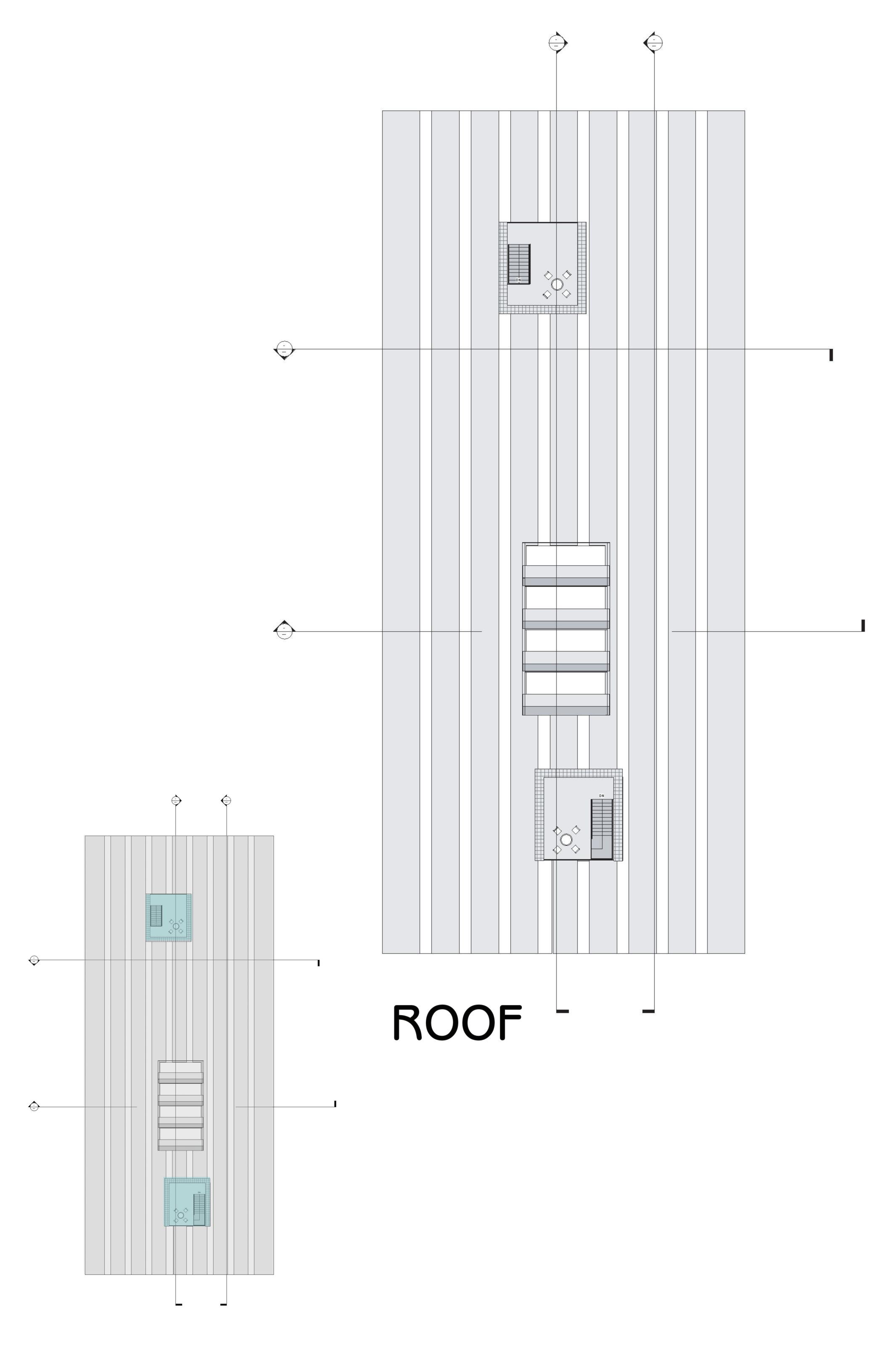
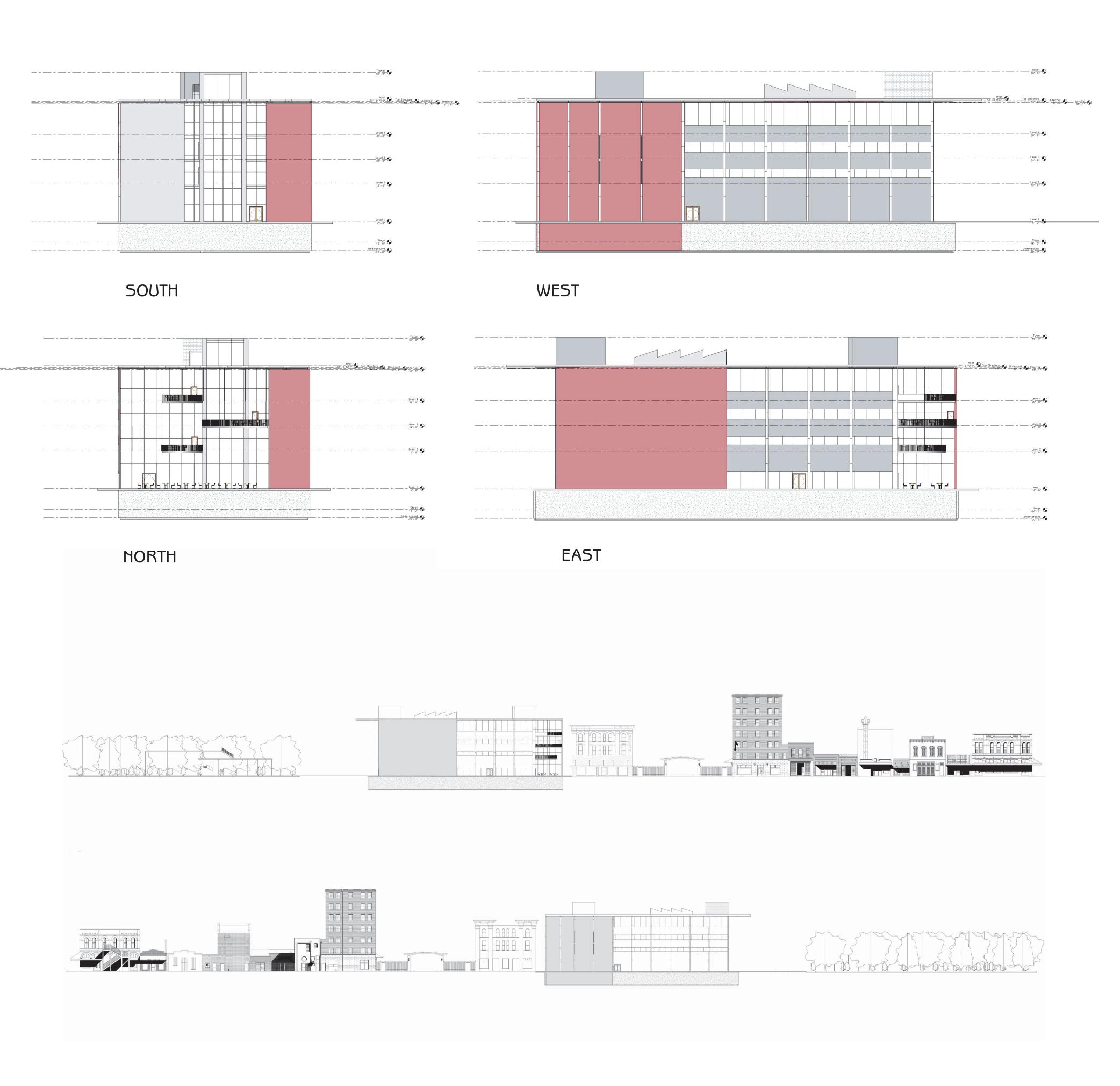
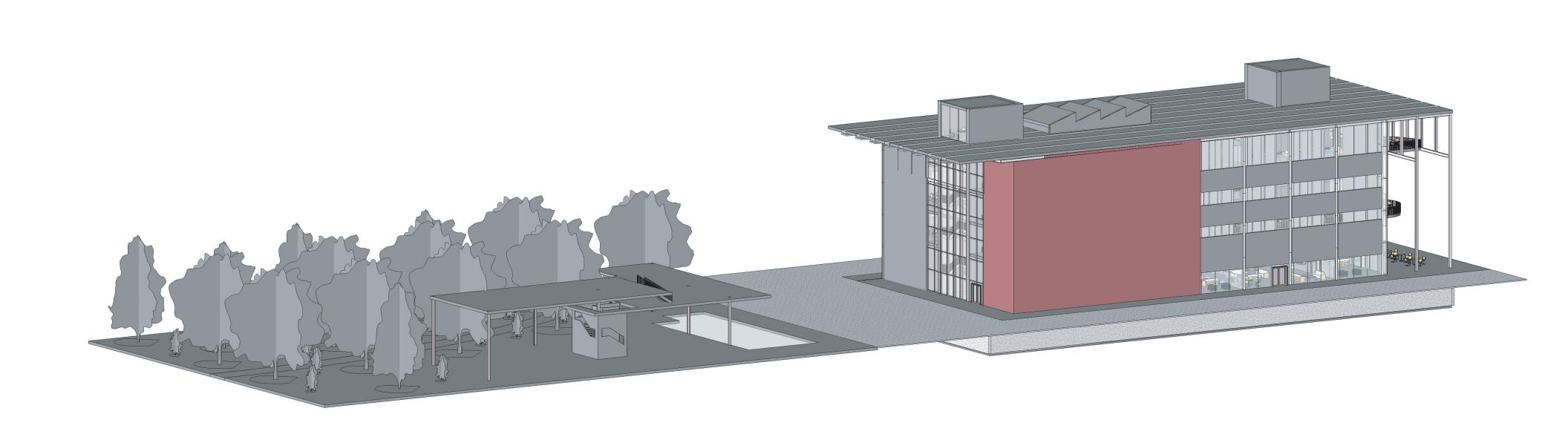
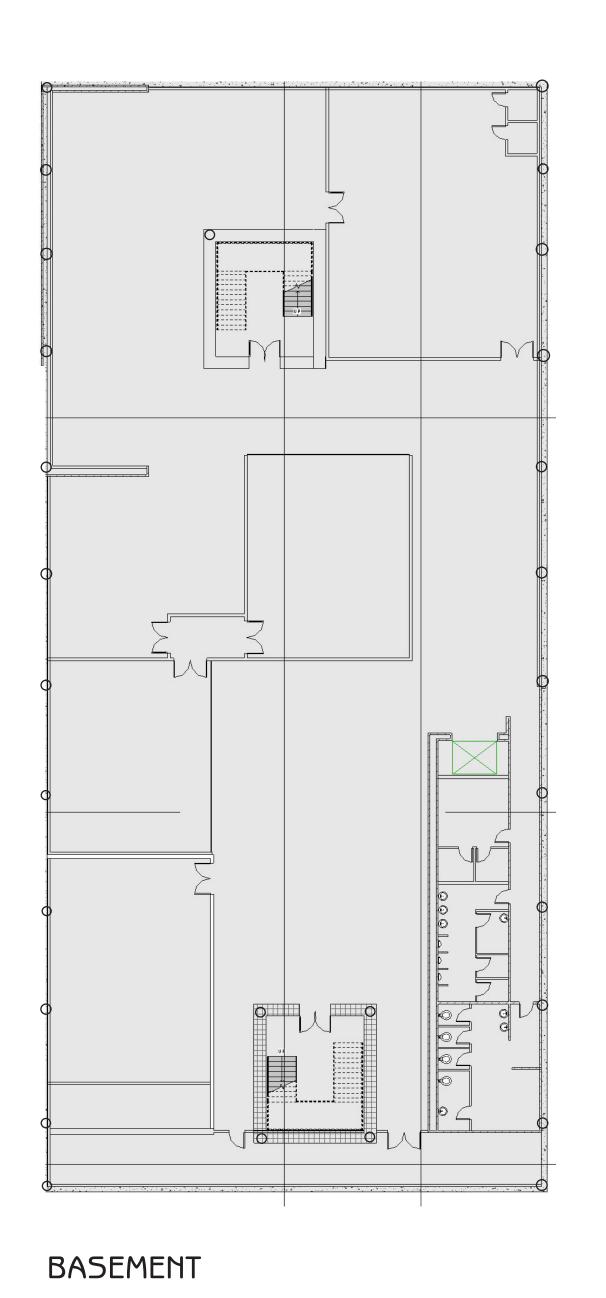


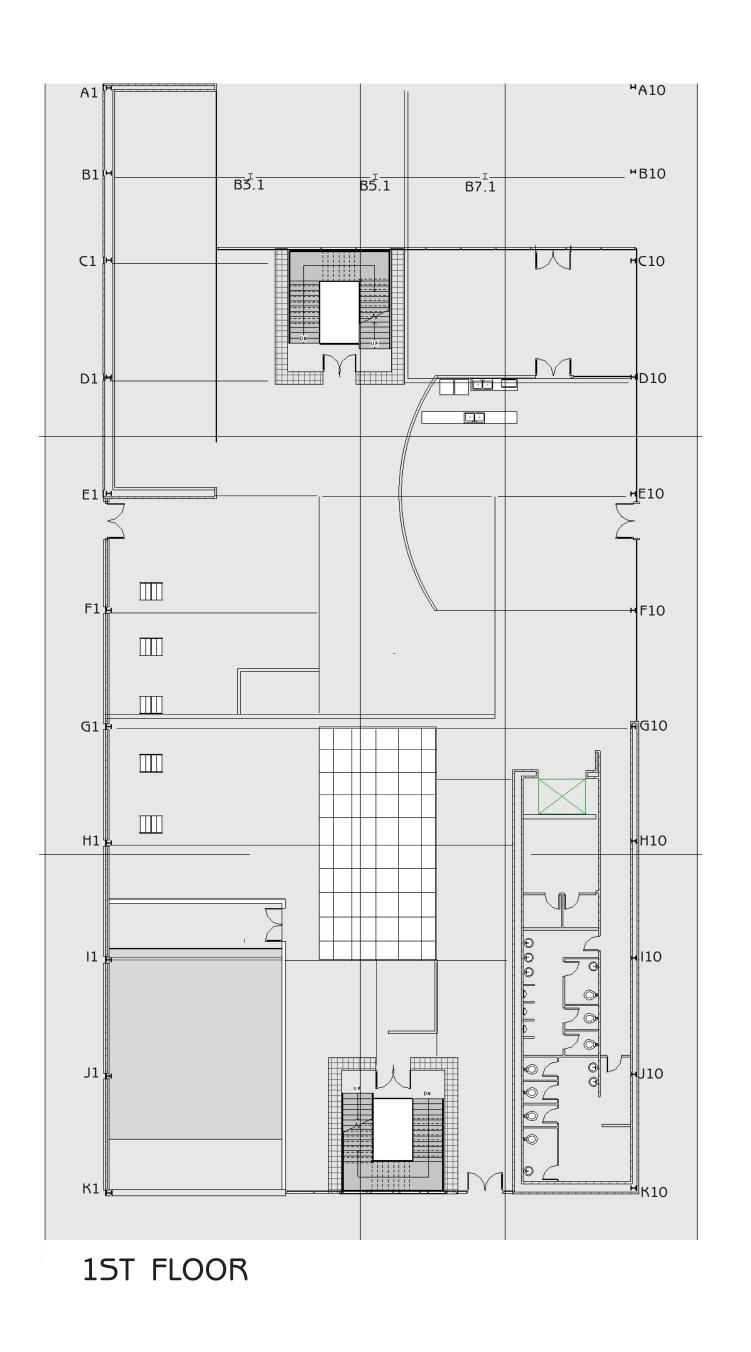
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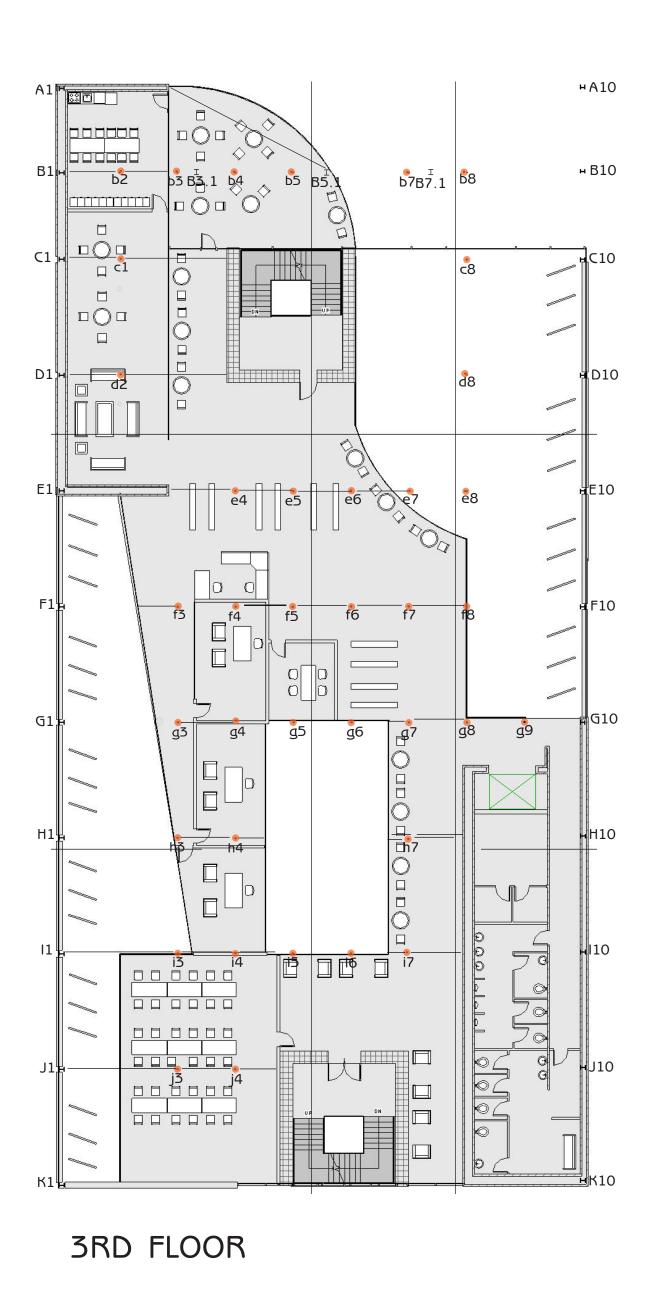


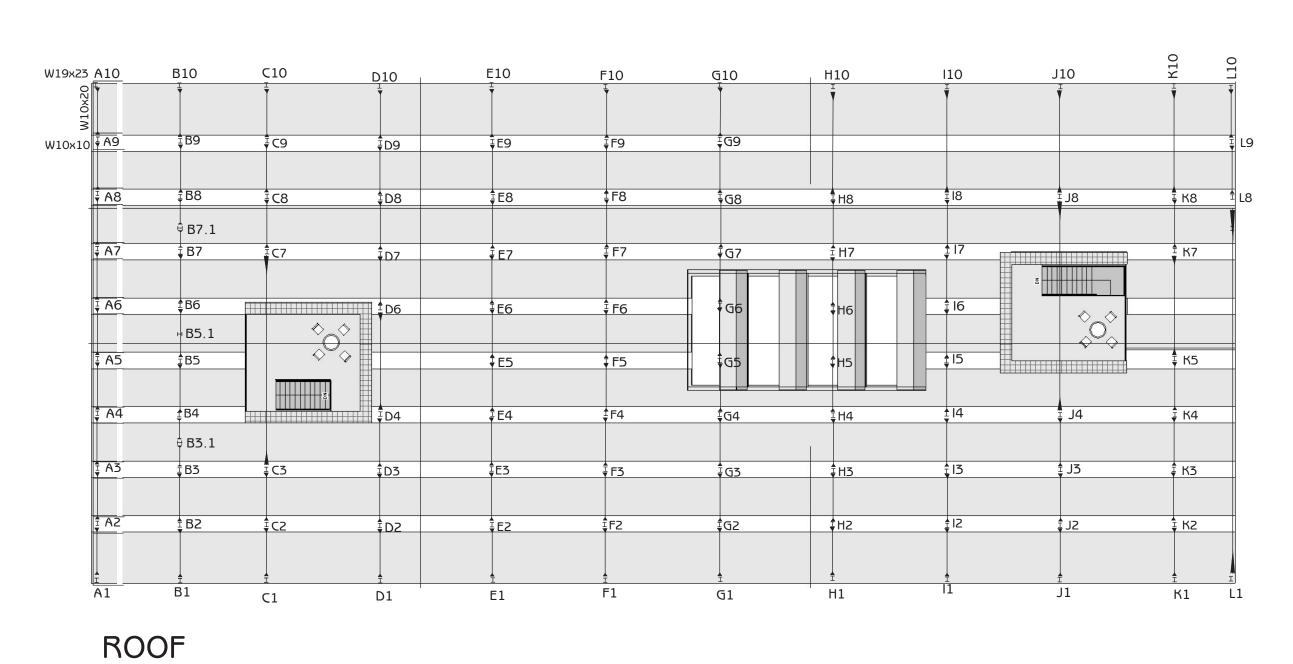


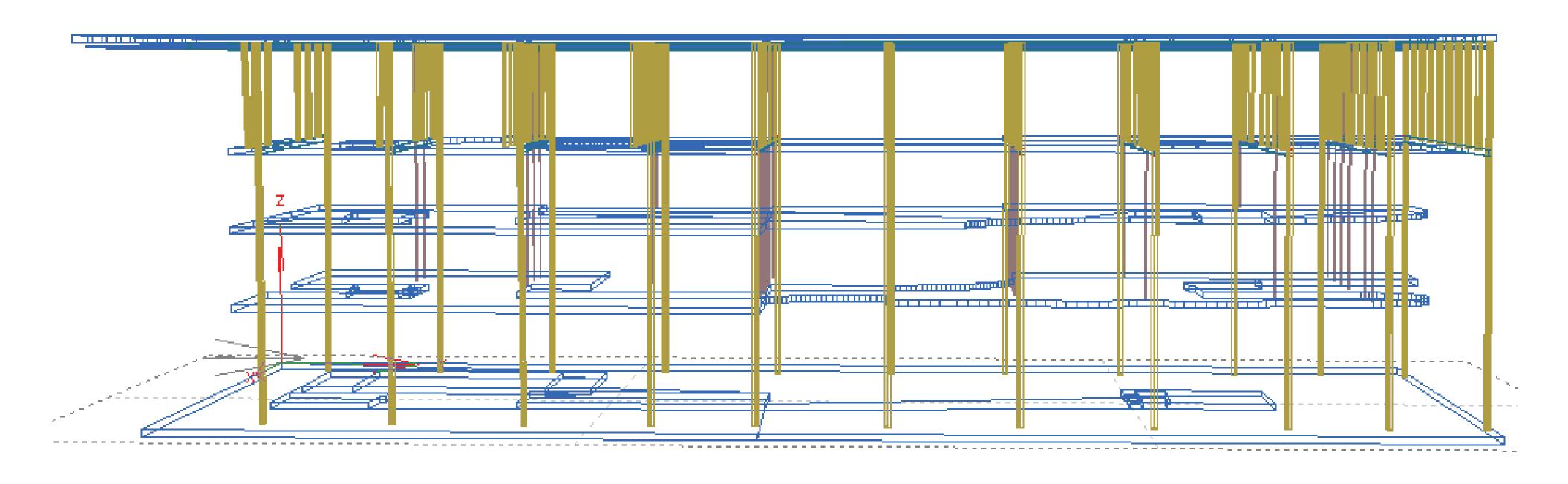


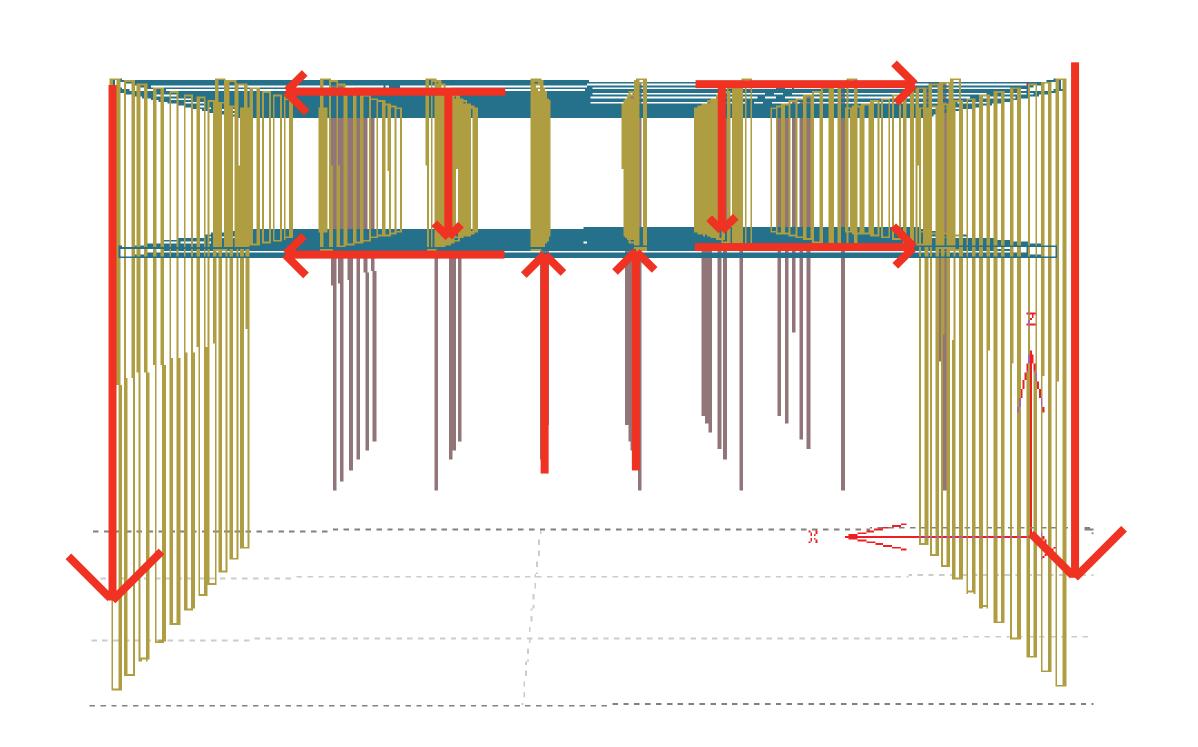


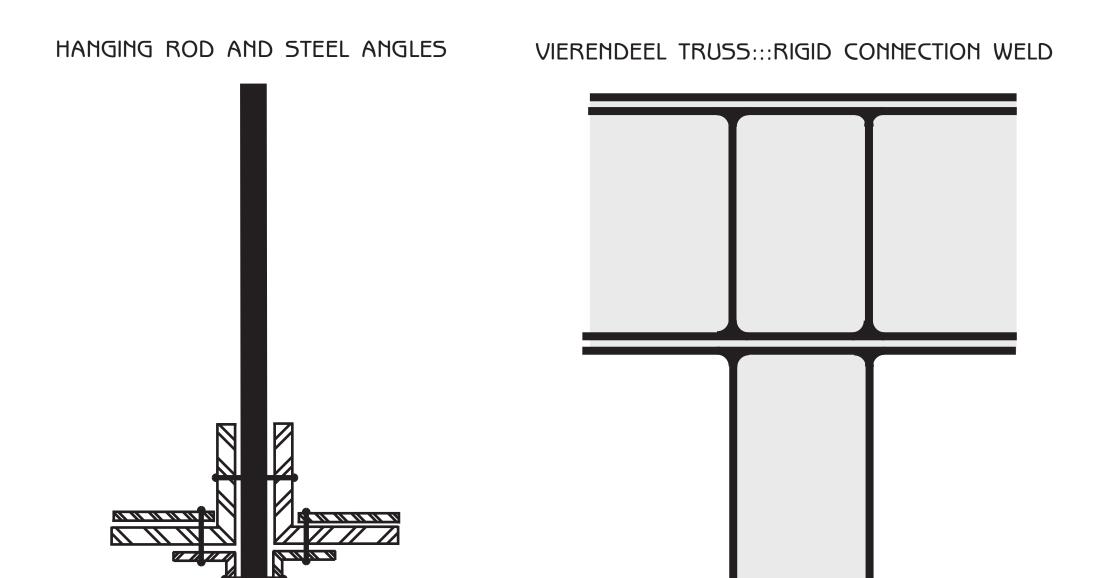




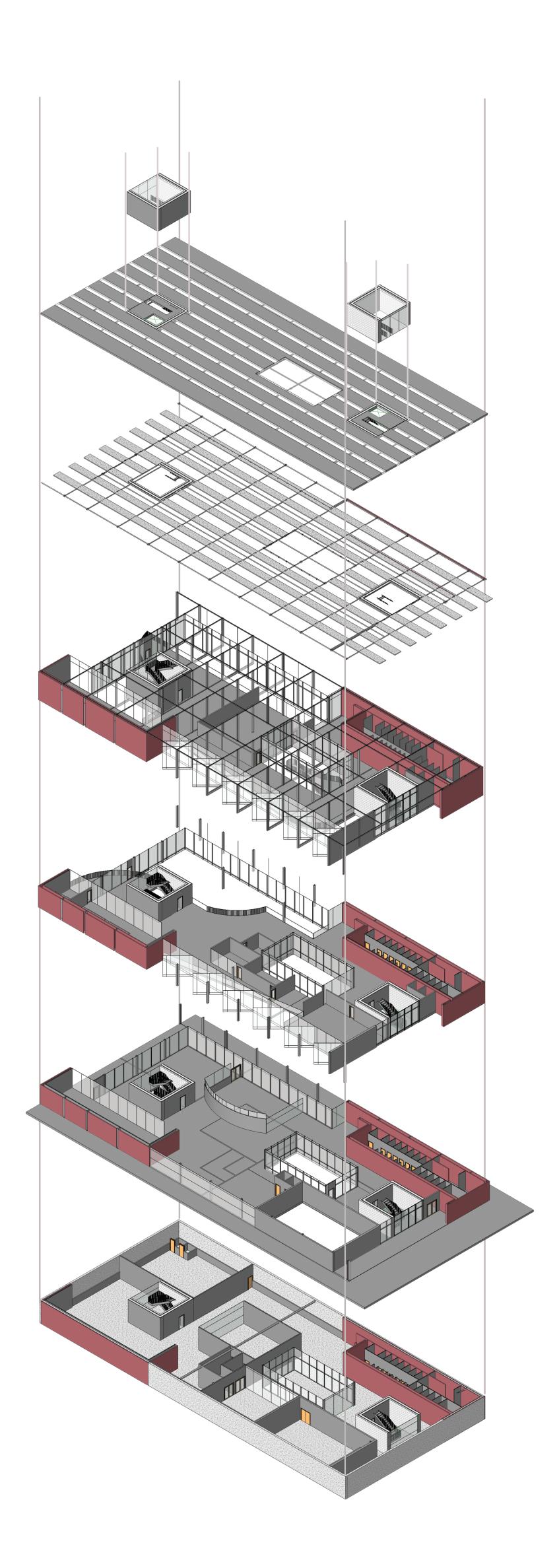


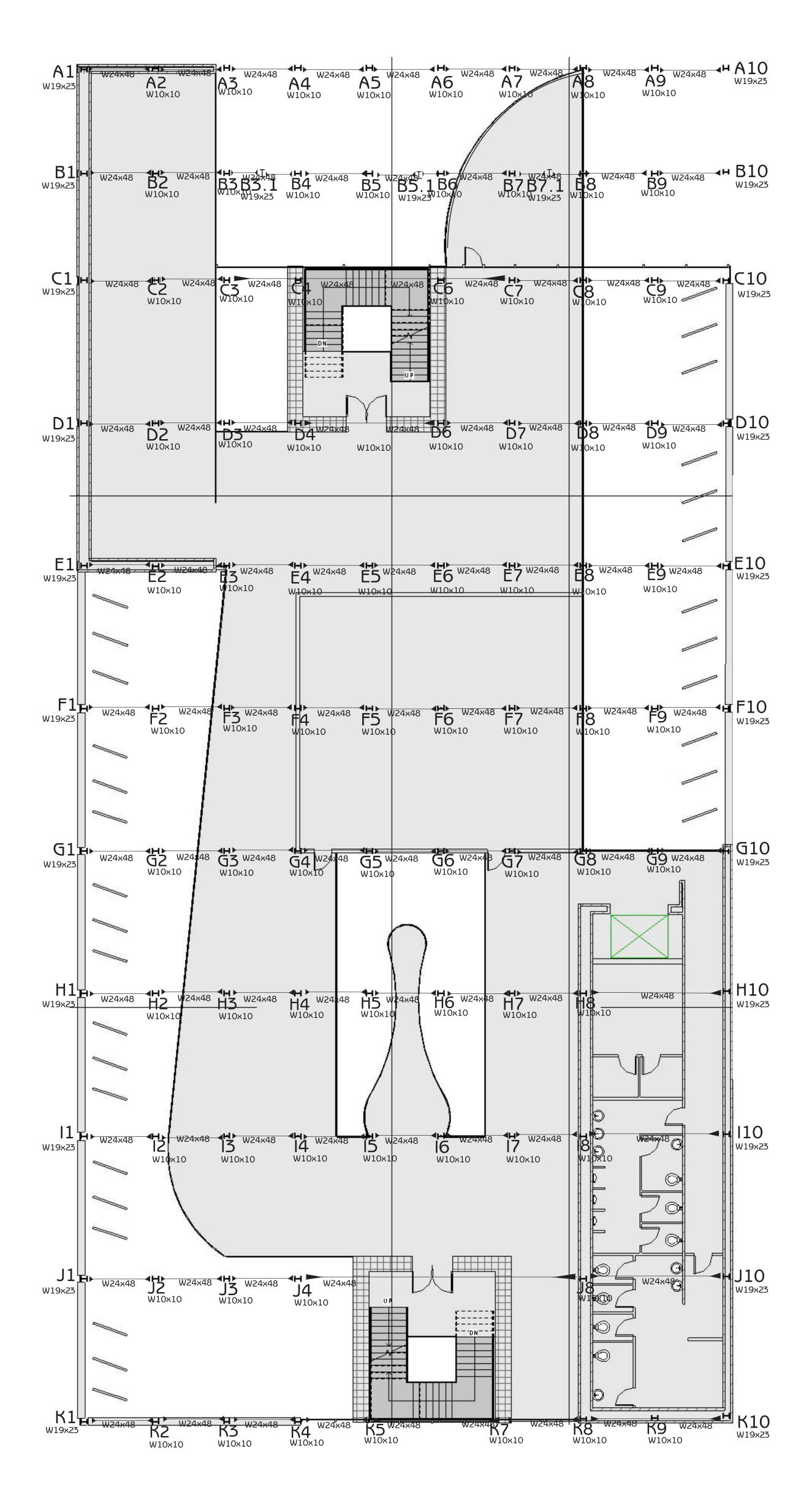




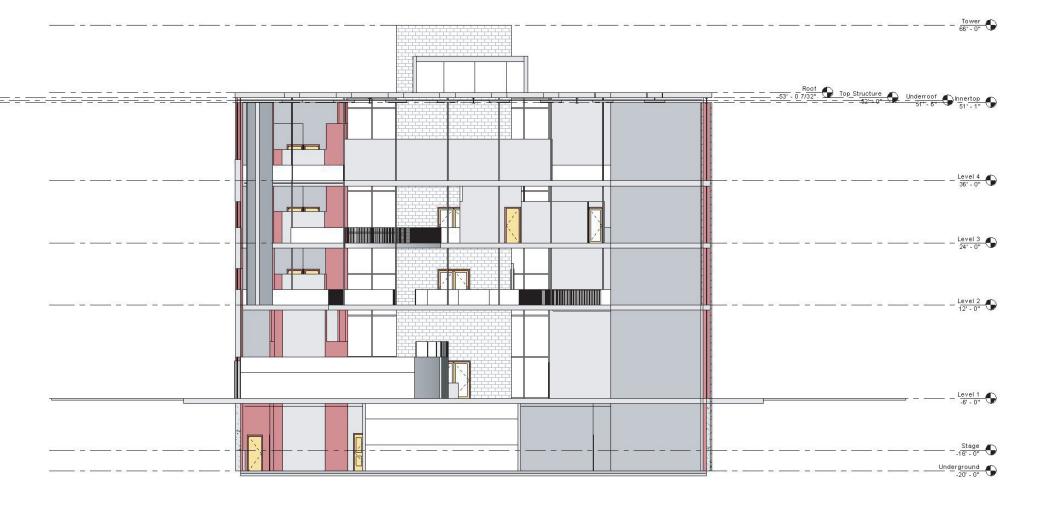






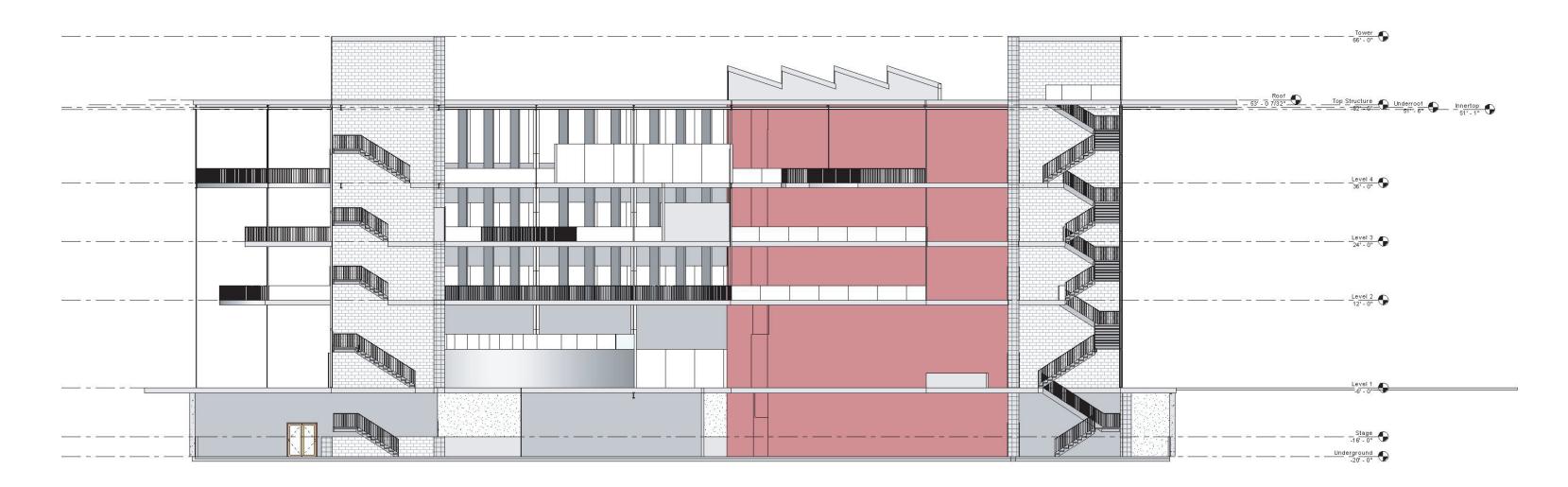


4TH FLOOR

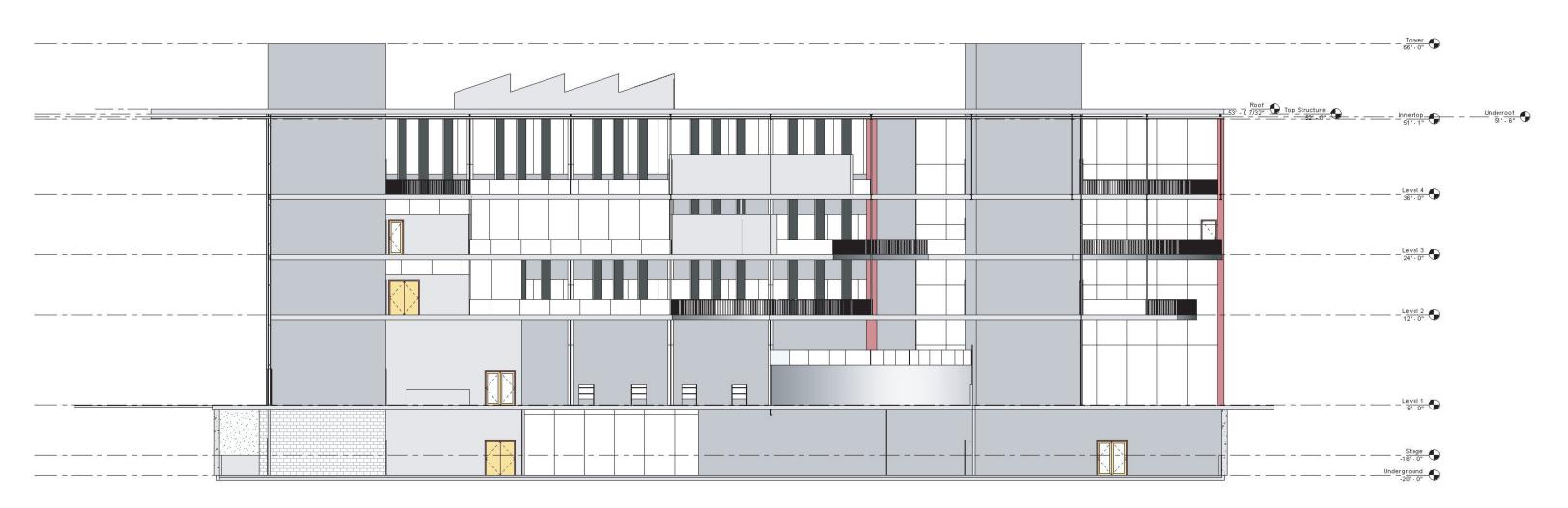




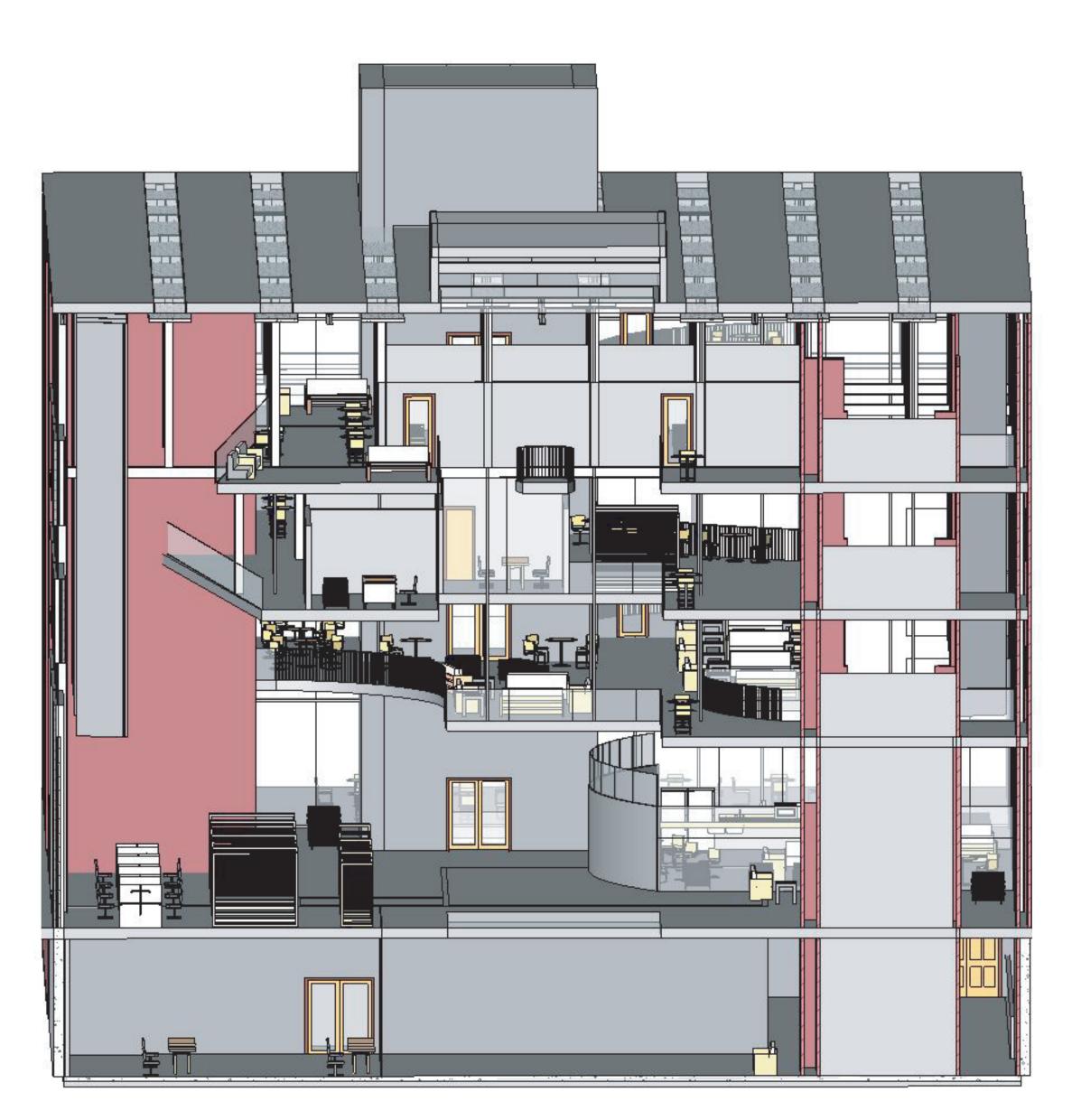
NORTH



WEST

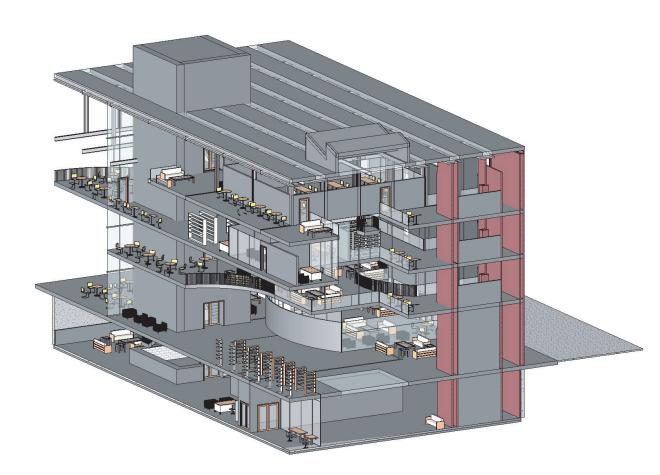


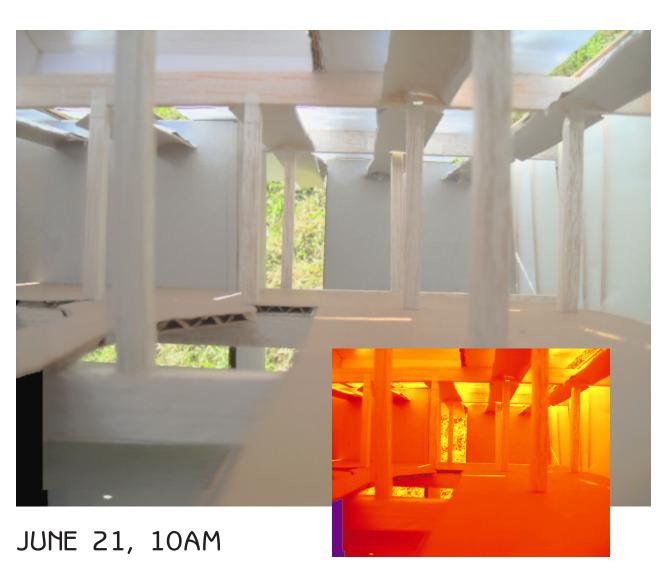
EAST

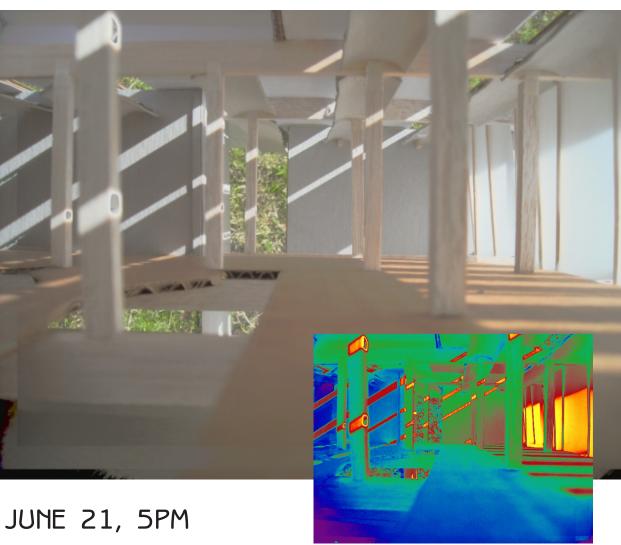


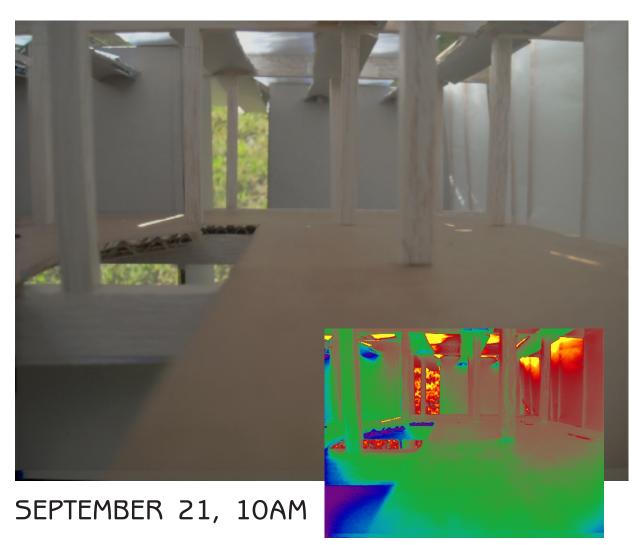


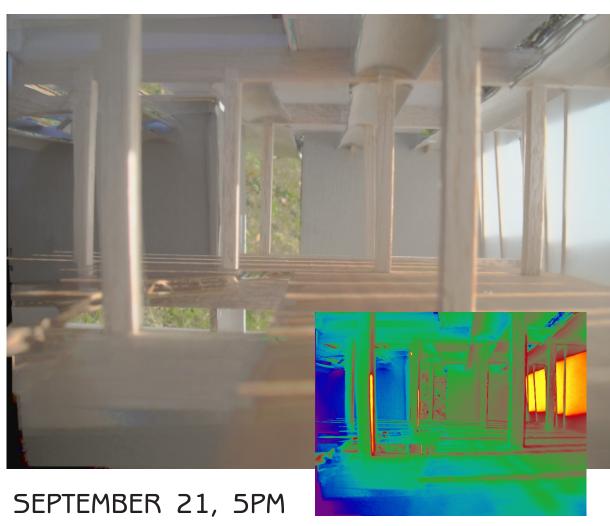
CENTER SOUTHWEST



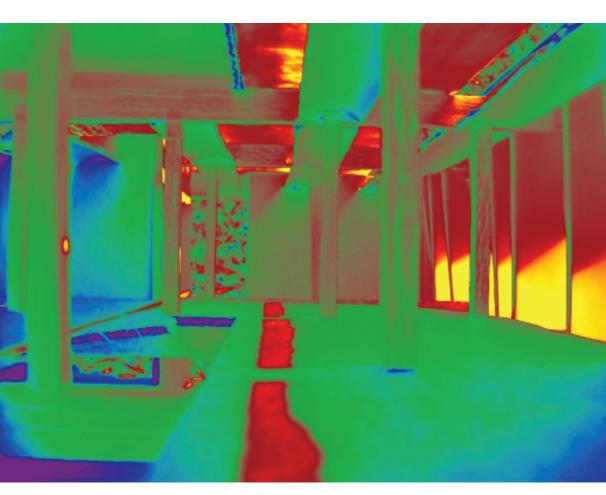


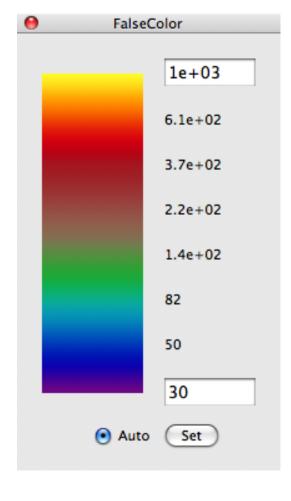












EXTERIOR: 120,000fc INTERIOR CENTER RIGHT: 108fc w/ Prestige Series PR 70 film = 74fc

Visible Light Transmitted: 69% Total Solar Energy Rejected: 50% Infrared Rejected: 97% Visible Light Reflected: 10% UV Rejected: 99.9% Glare Reduction: 23% Luminous Efficacy: 1.19

TOTAL U-VALUES::: TOTAL R-VALUES::: (C) .05 (A) .03

Flashing

**WALLS** 

½" Air space

1" airspace

Windows

drapes or blinds

Brick

Roof

6" precast, reinforced concrete

5/8" Gypsum Sheathing-Board

5/8" sheetrock-gypsum board?

5/8" Sheet rock-Gypsum board?

2 1/2" Panels of glass with low-e With suspended film

6" precast hollow core concrete slab

Insulated glass-triple glazing with low-e

8 1/2" expanded polystyrene (EPS)

3/8" Structural silicon adhesive

6" R-19 fiberglass batt in steel stud wall

3 ½" Acoustical batt with CSR soundscreen R3

.\_\_\_\_

1.00/thickness

0.56/thickness

0.56/thickness 1.00/thickness

3.00/in = 10.5

0.56/thickness

3.23/half in = 8

0.44/in

0.29

0.5

4.00/in

R-value

(B) .04

0.08

-----

12.5

1.8

0.05

1.8

0.1

1.8

1.8

0.125

3.4

20

0

0.25

**U-Value** 

WALL: (concrete) 21.6 (acoustic) 33.6 (brick) 24.7 .12 WINDOW: 8.3 .03 ROOF: 35.5

ASHRAE 90.1 Standard	ASHRAE Compliant- Energy Efficient
Fireproofing: Sprinkler System	Fireproofing: Sprinkler System
Cooling Equipment: DX Coils	Cooling Equipment: DX Coils
Heating Equipment: Furnace	Heating Equipment: DX Coils(Heat Pump) Air
Packaged Single Zone DX with Furnace with return air path- Plenum	Split System Single Zone Heat Pump- Ducted
Typical Unit Size: >760 kBtuh or 63 tons air cooled condenser type with EER 9.0 efficiency	Typical Unit Size: >760 kBtuh or 63 tons air cooled condenser type with EER 9.0 efficiency
Heating: >=225 kBtuh Efficiency 0.8	Heating: >=225 kBtuh Efficiency 0.8
Operate fans 1 hour before and 1 hour after close	Commissioned to monitor systems
	Operate fans 1 hour before and 1 hour after close
	Cycle Fans at Night(min OA at night) Control Zones with Fan "on" mode: Intermittent
No day lighting controls	Day lighting controls CA Title-24-2008 Dimming: 30% Light with design light level: 70fc
Usage Details: Simplified Schedules	Usage Details: Hourly Enduse Profile
Infiltration: Perim: 0.5ACH Core: 0.2 ACH	Infiltration: Perim: 0.5ACH Core: 0.2 ACH
Glass: Single Pilkington Solar E 6mm U=0.65	Glass: 1" Low-E with Suspended Film U=0.125
Windows: 40%	Windows: 40%
No Overhangs or Fins	Interior Vertical Fins Shading Devices
Minimum Lighting Requirements met	Minimum Lighting Requirements met and exceeded through use of natural light to reduce energy load for lighting- Ambient and Task Lighting throughout
HVAC Zones: Cooling Setpoints: 76F occupied	HVAC Zones: Monitored: Cooling Setpoints: 78F occupied
82F unoccupied	85F unoccupied
Heating Setpoints: 70F occupied	Heating Setpoints: 70F occupied
64F unoccupied	64F unoccupied
Minimum Design Air Flow: 0.5 cfm/saft	Minimum Design Air Flow: 0.5 cfm/sqft
Heater Spec: Natural Gas-Storage	Heater Spec: Natural Gas-In-Line (Instantaneous)

GOAL: 40 PTS (CERTIFIED) - 62 PTS (GOLD RATING)

#### Sustainable Sites

Prerequisite 1 - Construction Activity Pollution Prevention (Required)

Credit 1 - Site Selection: To avoid the development of inappropriate sites and reduce the environmental impact from the location of a building on a site.

pollution and land development impacts from automobile use

Credit 4.2 - Alternative Transportation- Bicycle Storage and Changing Rooms : To reduce

Credit 5.2 - Site Development- Maximize Open Space: To promote biodiversity by providing a high ration of open space to development footprint.

Credit 6.1 - Stormwater Design-Quantity Control: To limit disruption of natural hydrology by reducing impervious cover, increasing on site infiltration, reducing or eliminating pollution from storm water runoff and eliminating contaminants.

Credit 6.2 - Stormwater Design-Quality Control: To limit disruption and pollution of natural water flows from managing storm water runoff. Credit 7.1 - Heat Island Effect-Nonroof: To reduce heat islands to minimize impacts on

microclimate and human and wildlife habitats.

Credit 7.2 - Heat Island Effect-Roof: To reduce heat islands to minimize impacts on microclimate and human and wildlife habitats.

### Water Efficiency

Prerequisite 1 - Water Use Reduction (Required)

Credit 1 - Water Efficiency Landscaping: To limit or eliminate the use of potable water or other natural surface or subsurface water resources available on or near the project site for landscaping irrigation.

Credit 2 - Innovative Wastewater Technologies: To reduce wastewater generation and potable water demand while increasing the local aquifer recharge.

Credit 3 - Water Use Reduction: To further increase water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

### Energy and Atmosphere

Prerequisite 1 - Fundamental Commissioning of Building Energy Systems

Prerequisite 2 - Minimum Energy Performance

Prerequisite 3 - Fundamental Refrigeration Management

Credit 1 - Optimize Energy Performance: To achieve increasing levels of energy performance beyond the pre-requisite standard to reduce environmental and economic impacts associated with excessive energy use. Credit 3 - Enhanced Commissioning: To begin the commissioning process early in the design

process and execute the additional activities after system performance verification is complete. Credit 4 - Enhanced Refrigerant Management: To reduce ozone depletion and support early compliance with the Montreal Protocol while minimizing direct contributions to climate change. Credit 5 - Measurement and Verification: To provide fro the ongoing accountability of building energy consumption over time.

Credit 6 - Green Power: To encourage the development and use of grid-source, renewable energy technologies on a net zero pollution basis.

### Materials and Resources

Prerequisite 1 - Storage and Collection of Recyclables

Credit 2 - Construction Waste Management: To divert construction and demolition debris from disposal in landfills and incineration facilities. Redirect recyclable recovered resources back to the manufacturing process and reusable materials to appropriate sites.

Credit 4 - Recycled Content: To increase the demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.

Credit 5 - Regional Materials: To increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts from transportation.

### Indoor Environmental Quality

Prerequisite 1 - Minimum Indoor Air Quality Performance

Prerequisite 2 - Environmental Tobacco Smoke (ETS) Control

Credit 1 - Outdoor Air Delivery Monitoring: To provide capacity for ventilation system monitoring to help promote occupant comfort and well being.

Credit 8.1 - Daylight and Views-Daylight: To provide the building occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

Credit 8.2 - Daylight and Views-Views: To provide building occupants a connection to the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

### Innovation in Design

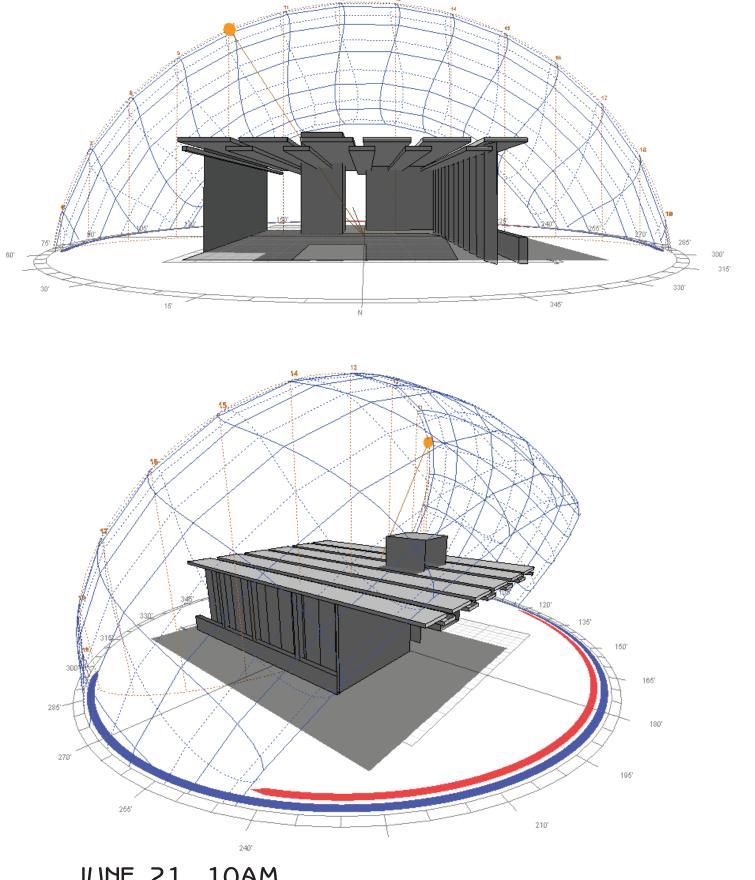
**Credit** 1 - Innovation in Design: To provide teams and projects the opportunity to achieve exceptional performance above the required set by the LEED Green Building Rating System and/or innovative performance not specifically addressed by the LEED Green Building Rating

Credit 2 - LEED Accredited Professional: To support and encourage the design integration required by LEED to streamline the application and certification process.

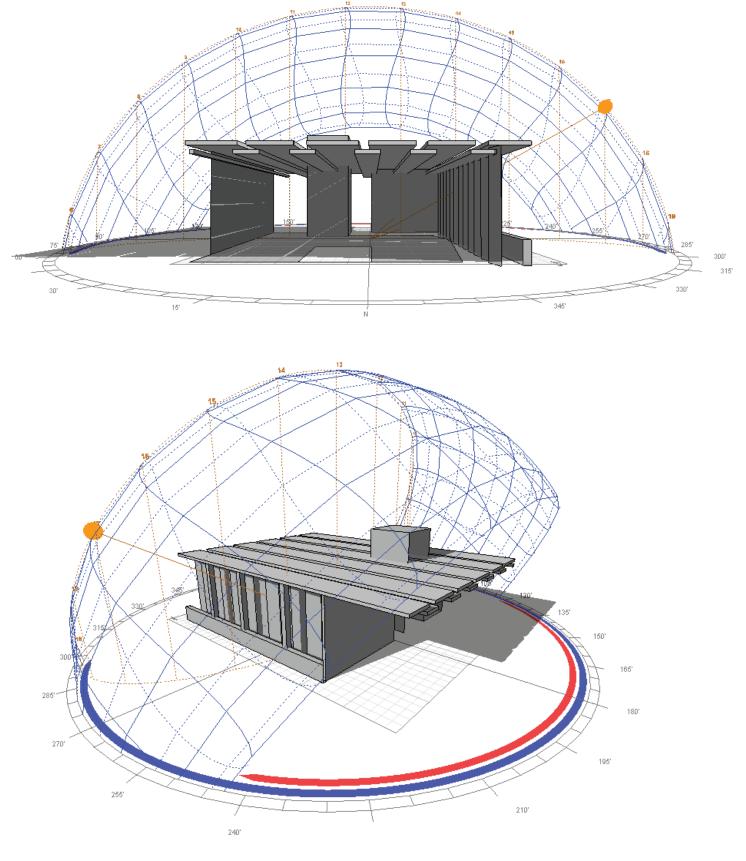
## Regional Priority

Credit 1 - Regional Priority: To provide an incentive for the achievement of credits that addresses geographically specific environmental priorities.

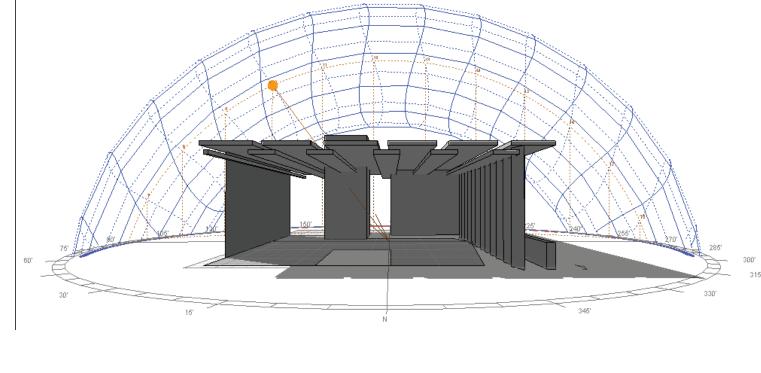
# ECOTECT SHADING STUDY OF 4TH FLOOR READING ROOM SOUTHWEST CORNER

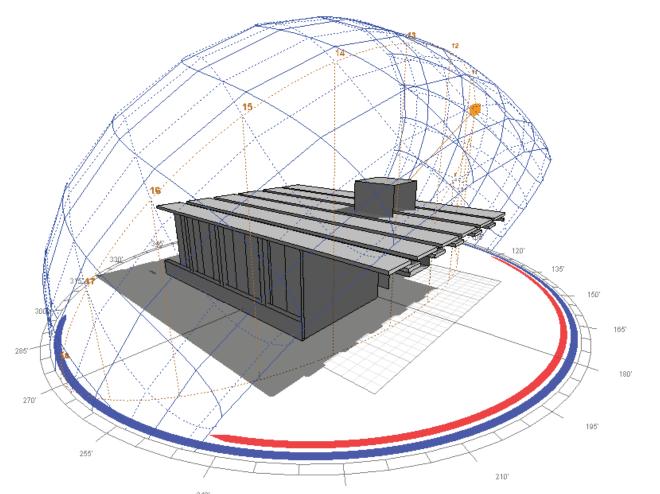


JUNE 21, 10AM

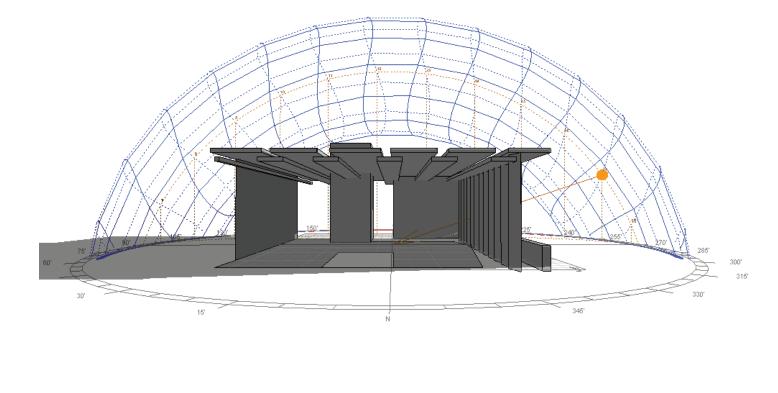


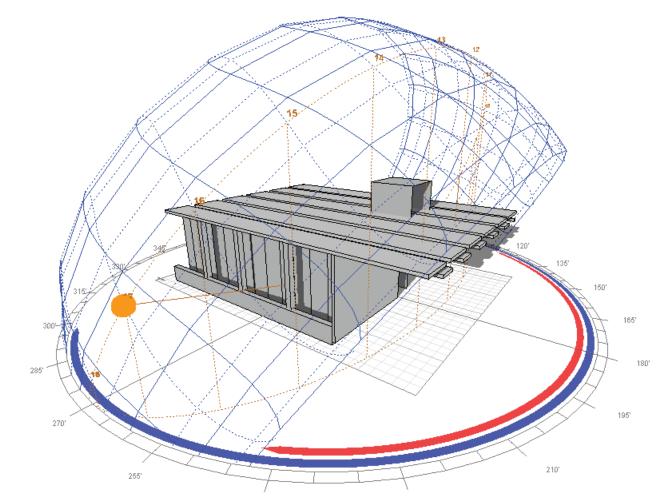
JUNE 21, 5PM



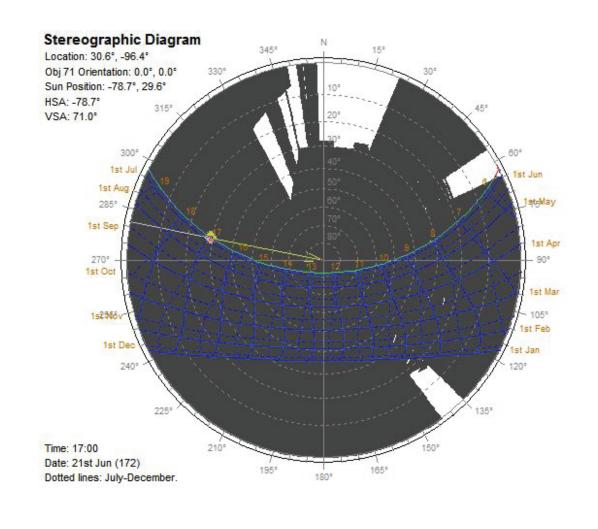


SEPTEMBER 21, 10AM





SEPTEMBER 21, 5PM



SUN PATH DIAGRAM

