Courtney Wong
SE Stanford

John Dodini
Appr Stanford

Diana Louie
CM Stanford

Sara Sundelin
CM KTH

Curtis Wong
SE Stanford

Karolina
Ostrowska
A WUoT

THE EXPRESS WORLD

- Site Localization and Climate
- Biomimicry Inspiration
- Site Analysis
- Concept 1 – AEC
- Concept 2 – AEC
- Target Value Design
- Our Process
- Decision Matrix

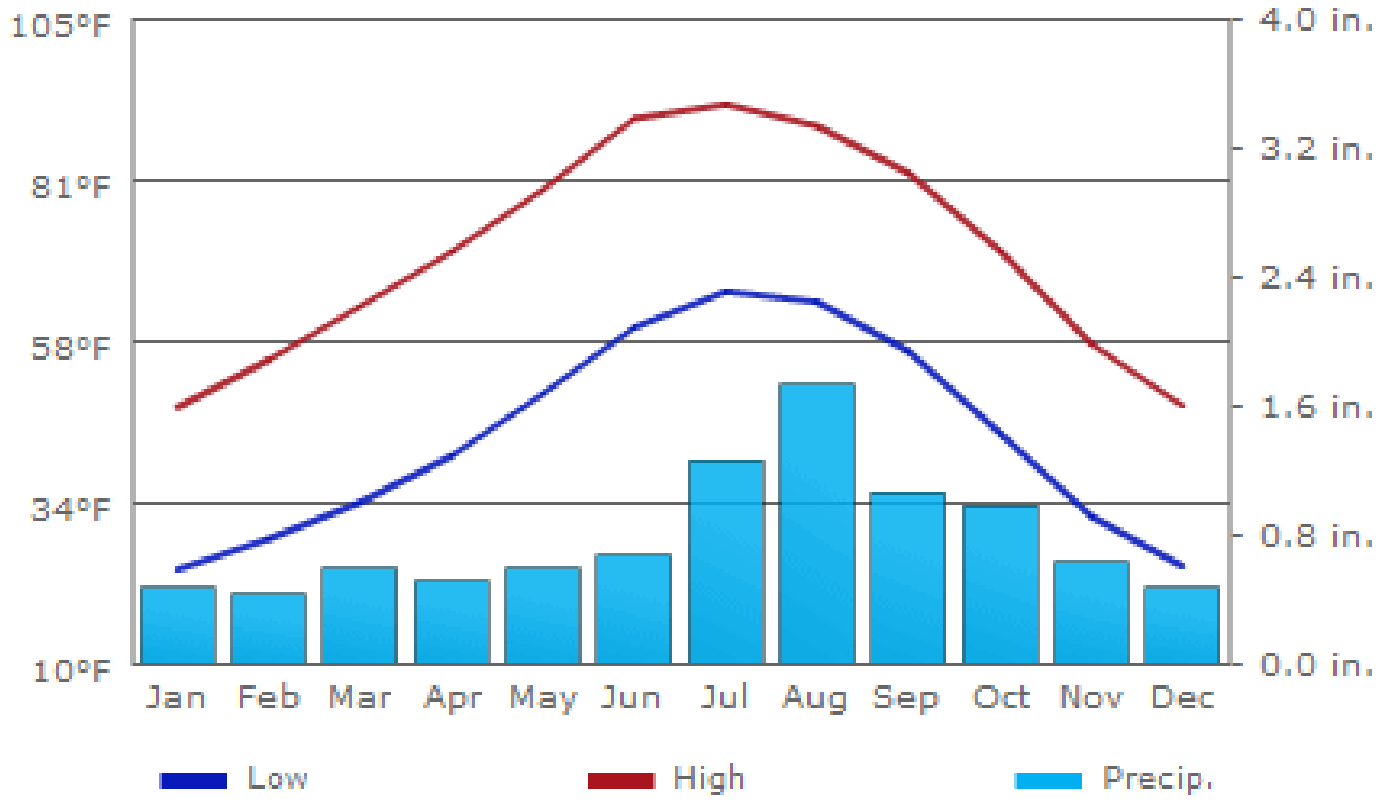
QUICK OVERVIEW

SITE LOCALIZATION & CLIMATE

Albuquerque, *New Mexico, USA*

35°06'N 106°36'W

Local Temperature



***Albuquerque**, New Mexico, USA*

35°06'N 106°36'W

- **DAY TIME**

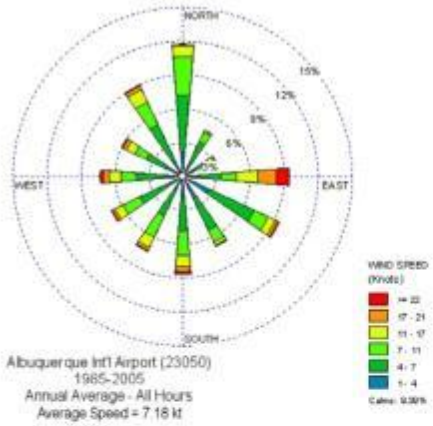
  wind directions:

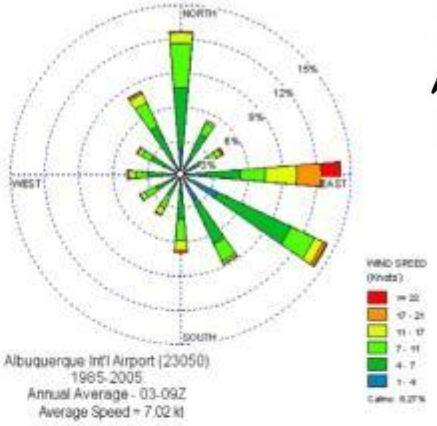
  N and S-E →
  NATURAL VENTILATION

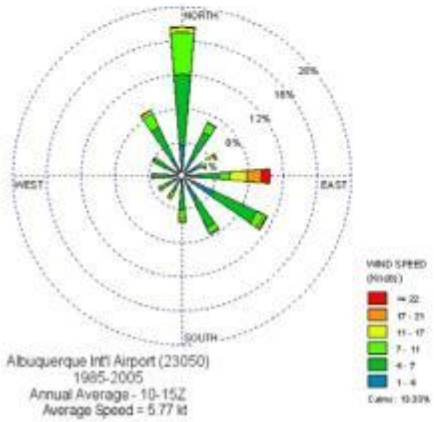
- **NIGHT TIME**

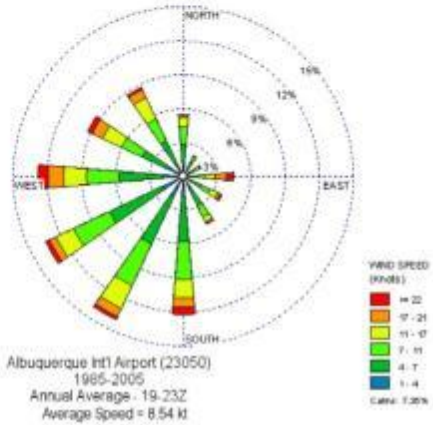
  wind directions:

  W and S-W →
  NIGHT COOLING



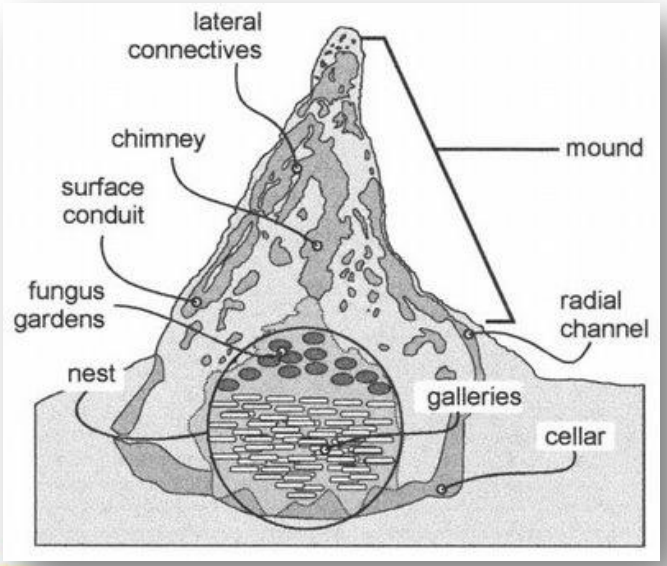






LOCAL WIND CONDITIONS

- NATURAL VENTILATION
- LARGE OPEN SPACE
- BUILDING ORIENTATION
- ORGANIC FORM
- DESERT LOOK



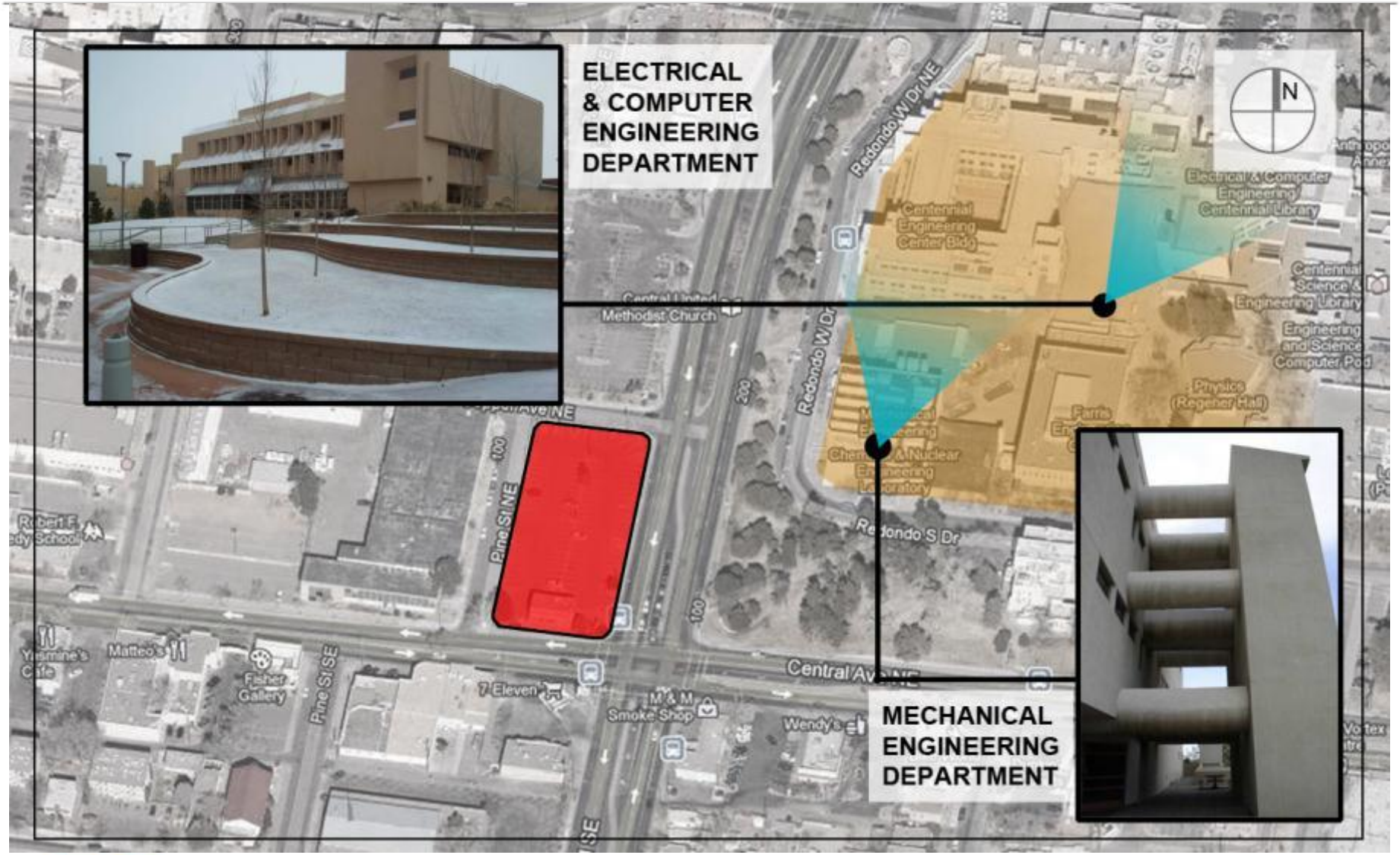
BIOMIMICRY INSPIRATION

TERMITE MOUND

SITE RELATED CONCERNS

UNIVERSITY OF NEW MEXICO

SITE LOCALIZATION

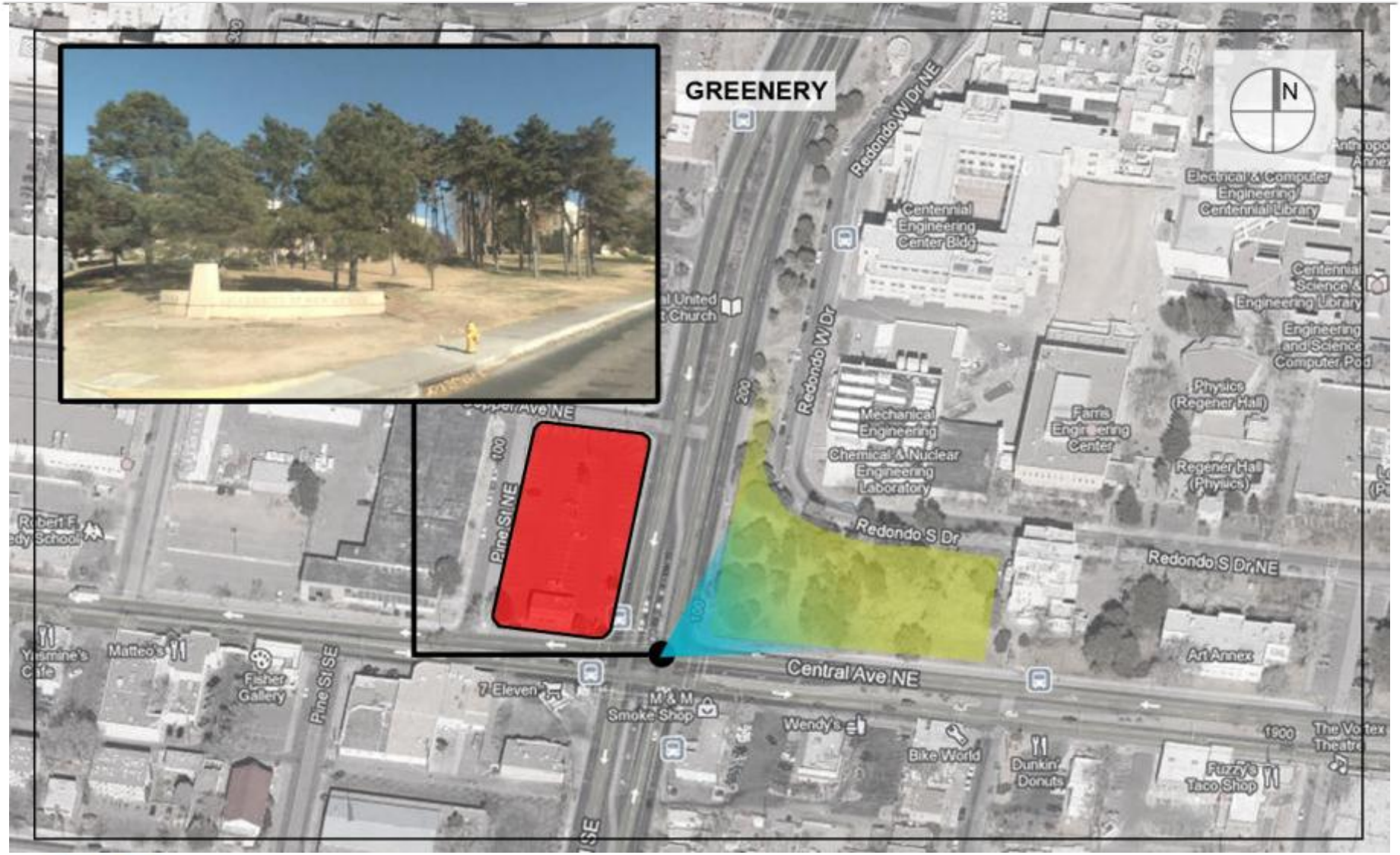


SITE ANALYSIS

SURROUNDING

SITE ANALYSIS

SURROUNDING

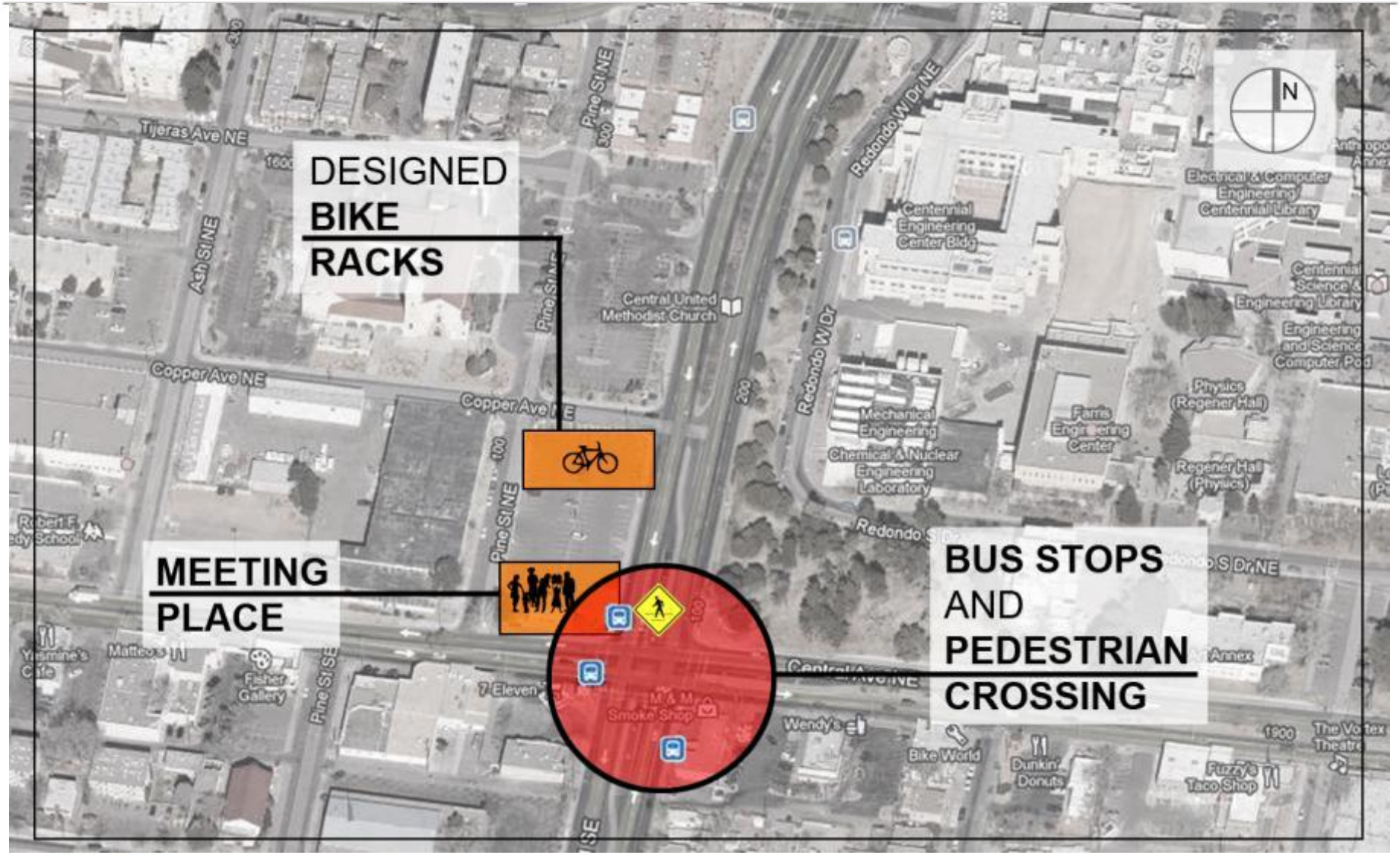


SITE ANALYSIS

SURROUNDING

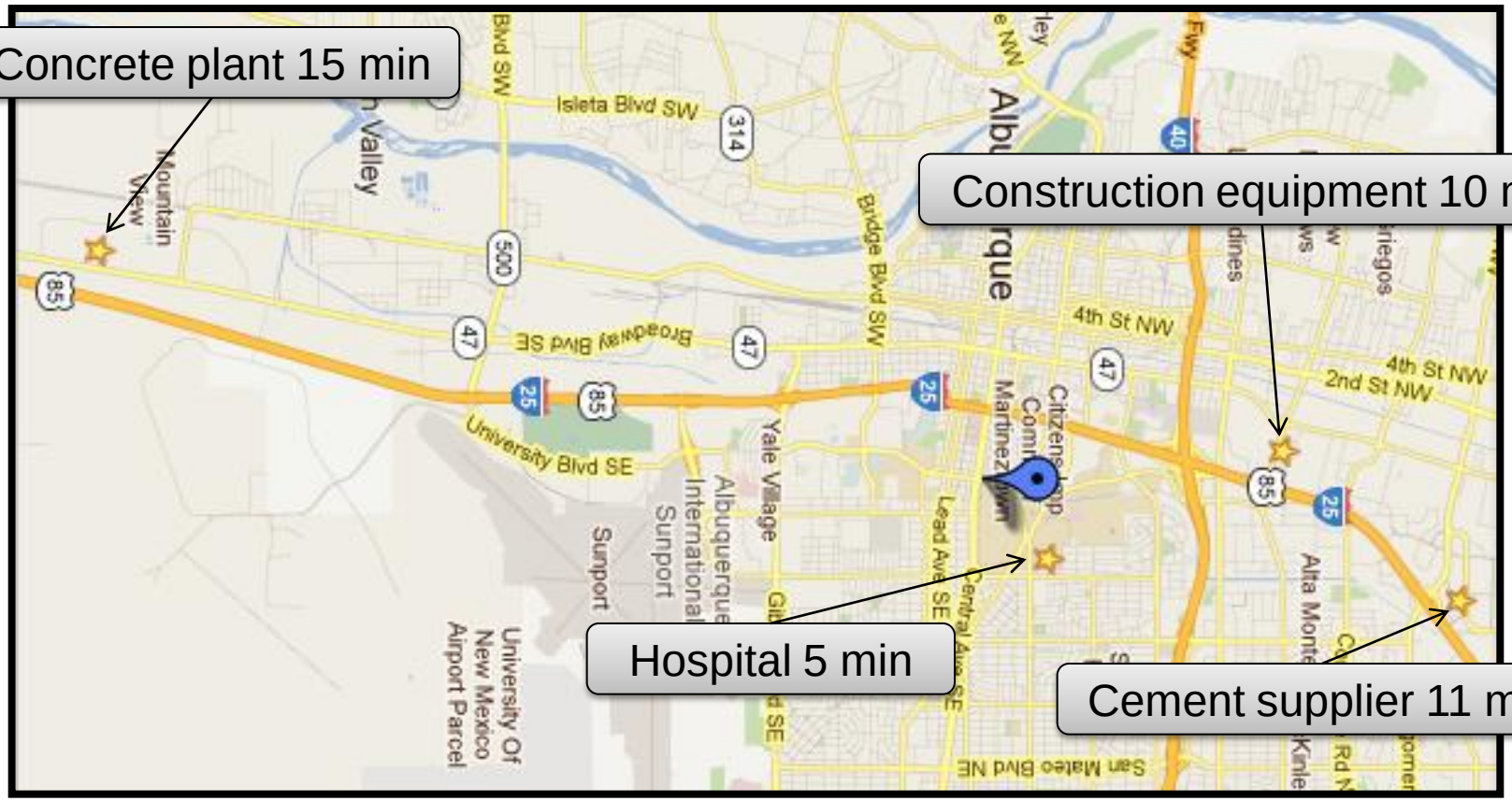
SITE ANALYSIS

SURROUNDING

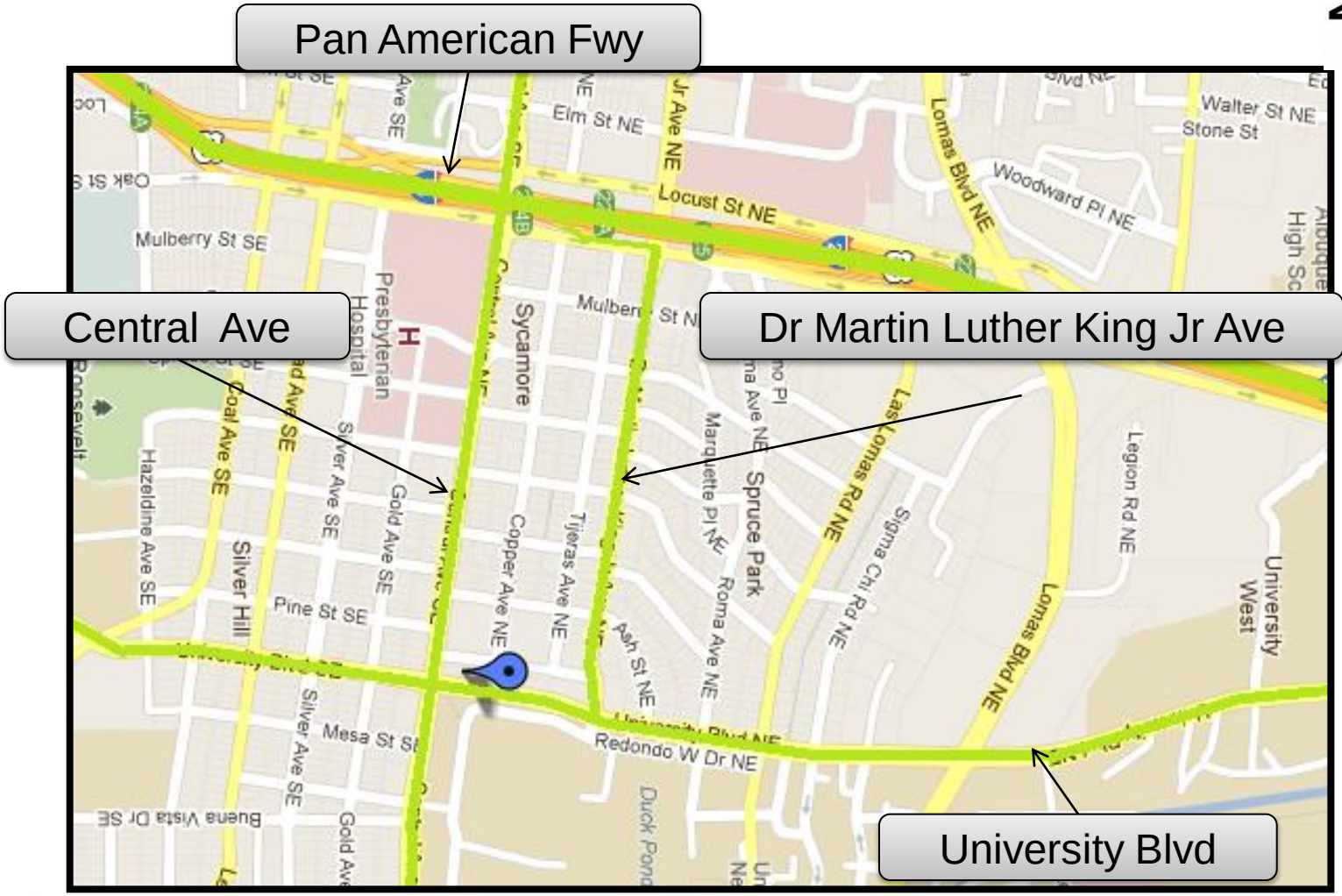


SITE ANALYSIS

SURROUNDING



LOCAL COMPANIES


Pan American Fwy
Central Ave
Dr Martin Luther King Jr Ave
University Blvd
N
Locust St NE
Elm St NE
Mulberry St SE
Sycamore
Presbyterian Hospital
Walter St NE
Stone St
Woodward Pl NE
Lomas Blvd NE
Spruce Park
Lomas Blvd NE
University West
Legion Rd NE
Silver Hill
Pine St SE
Copper Ave NE
Tijeras Ave NE
Roma Ave NE
Redondo W Dr NE
Mesa St SE
Silver Ave SE
Gold Ave SE
Coal Ave SE
Hazeldine Ave SE
Buena Vista Dr SE

SITE ACCESS

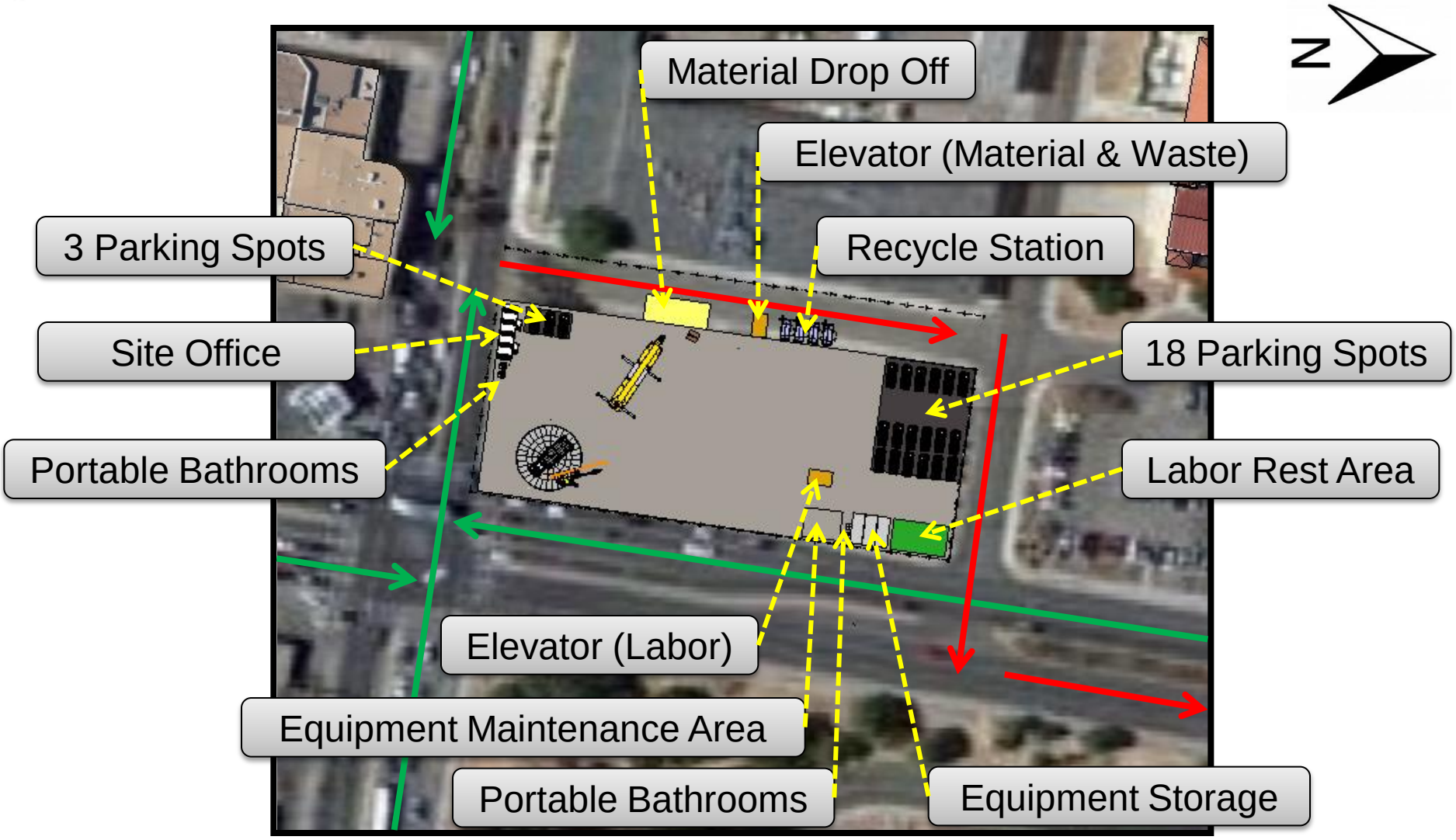
1 mobile crane

2 construction elevators

1 fork lift

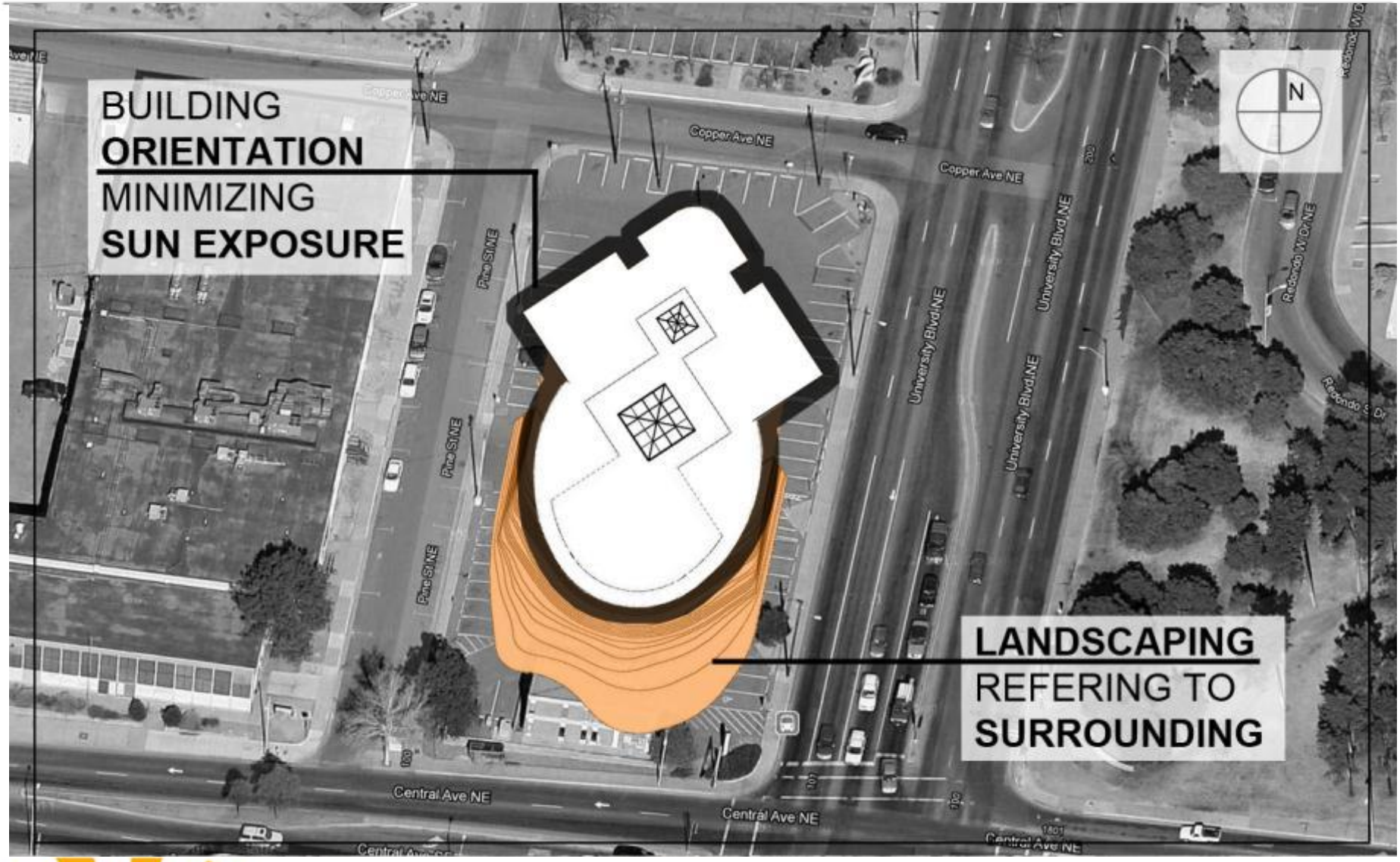
2 excavator trucks

2 excavators

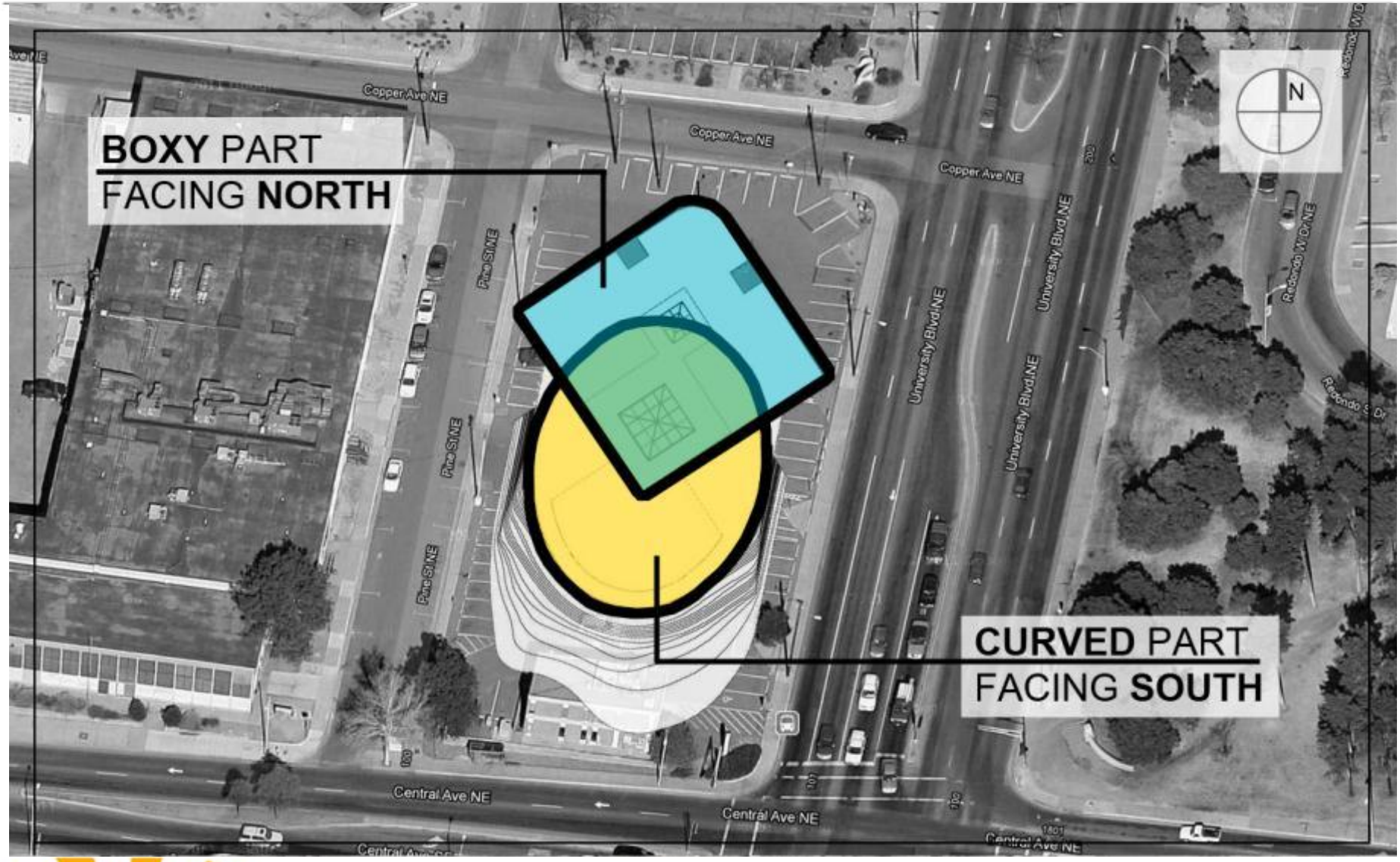

N
Material Drop Off
Elevator (Material & Waste)
3 Parking Spots
Recycle Station
Site Office
18 Parking Spots
Portable Bathrooms
Labor Rest Area
Elevator (Labor)
Equipment Maintenance Area
Portable Bathrooms
Equipment Storage

SITE PLAN

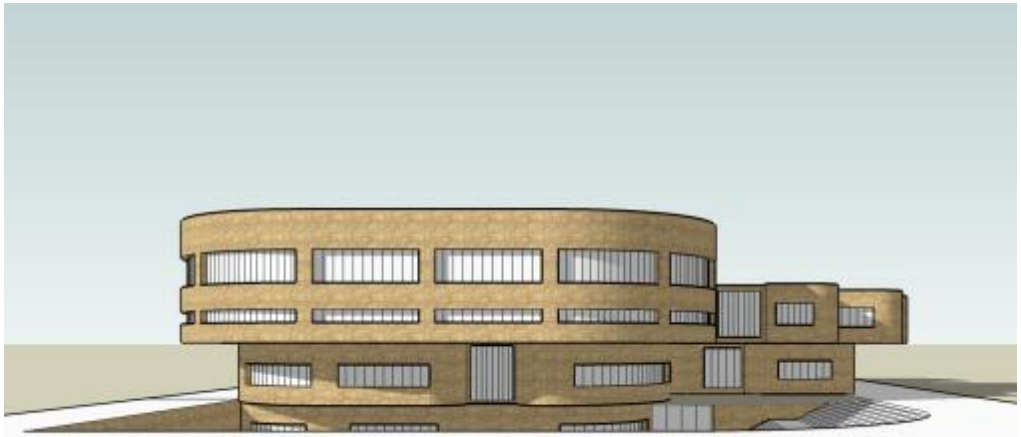

TERMITE
ENTERPRISE
#1
CONCEPT

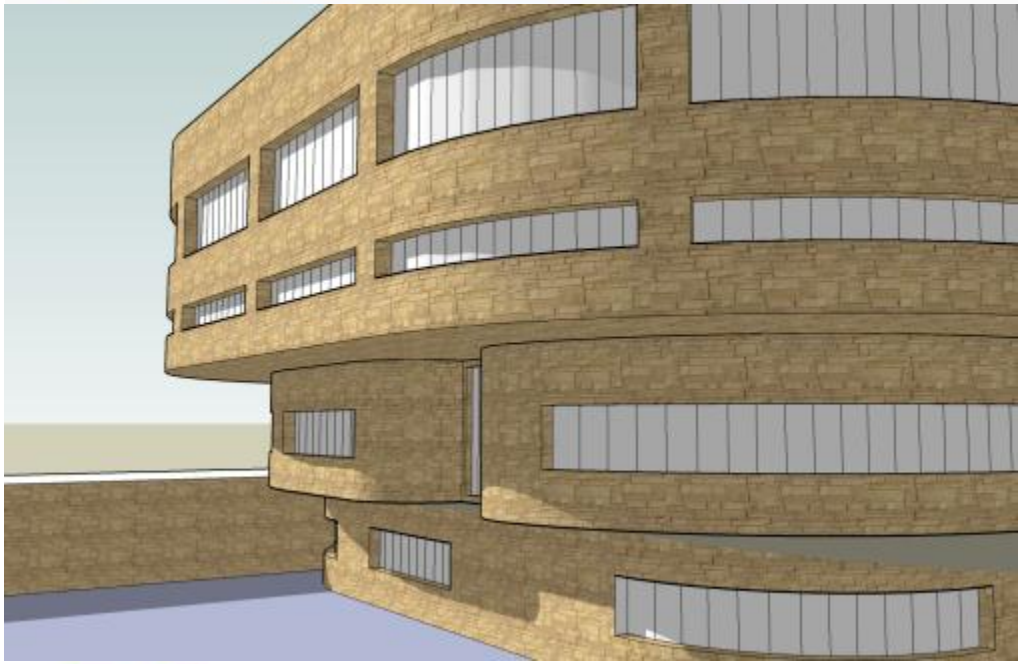


BUILDING ORIENTATION



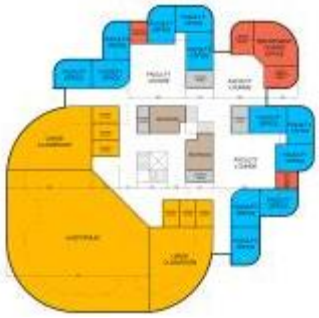
BUILDING ORIENTATION





SUMMARY

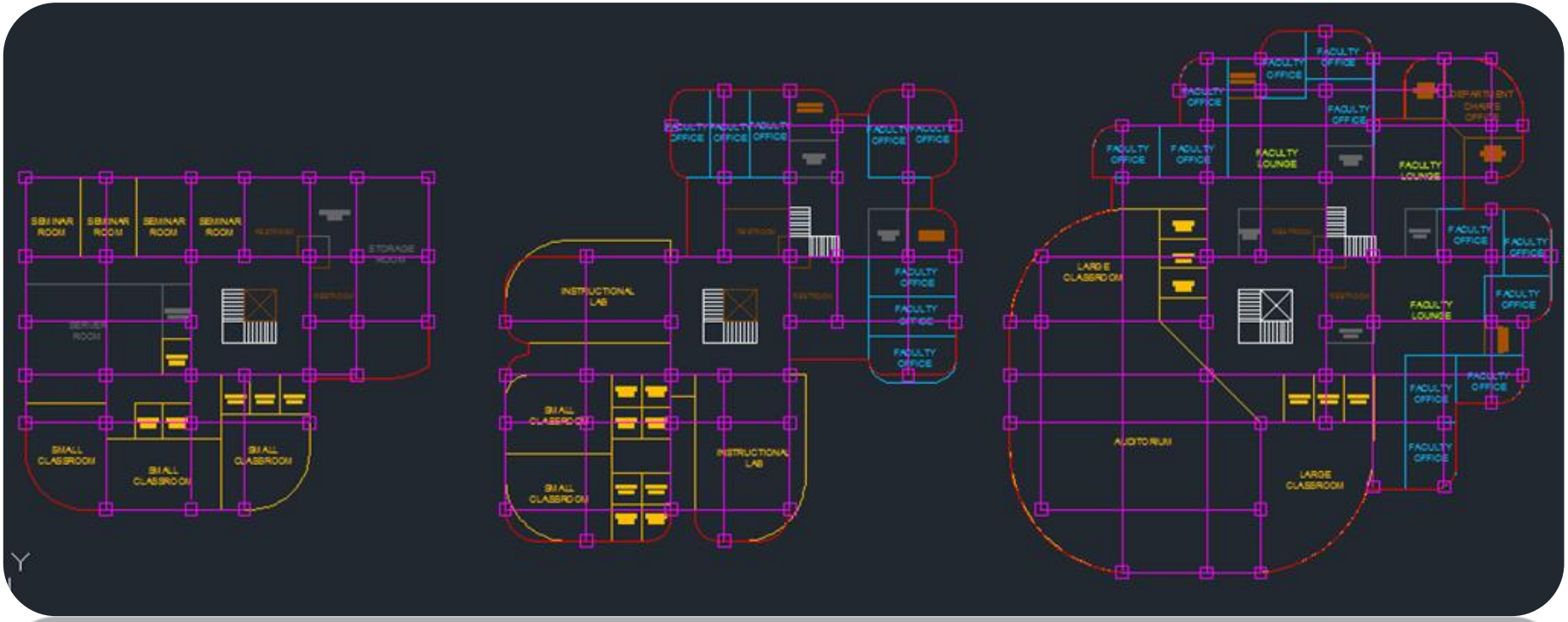
EDUCATION SPACES	12 084 SqFt	(40%)
FACULTY SPACES	4 136 SqFt	(14%)
ADMINISTRATION	990 SqFt	(3,4%)
TECHNICAL AND STORAGE	2 287 SqFt	(7,6%)
SANITARY	1 172 SqFt	(4%)
COMMUNICATION AND LOUNGES	10 470 SqFt	(35%)
OVERALL	**29 967 SqFt**	



REVISED FOR
STRUCTURAL REASONS

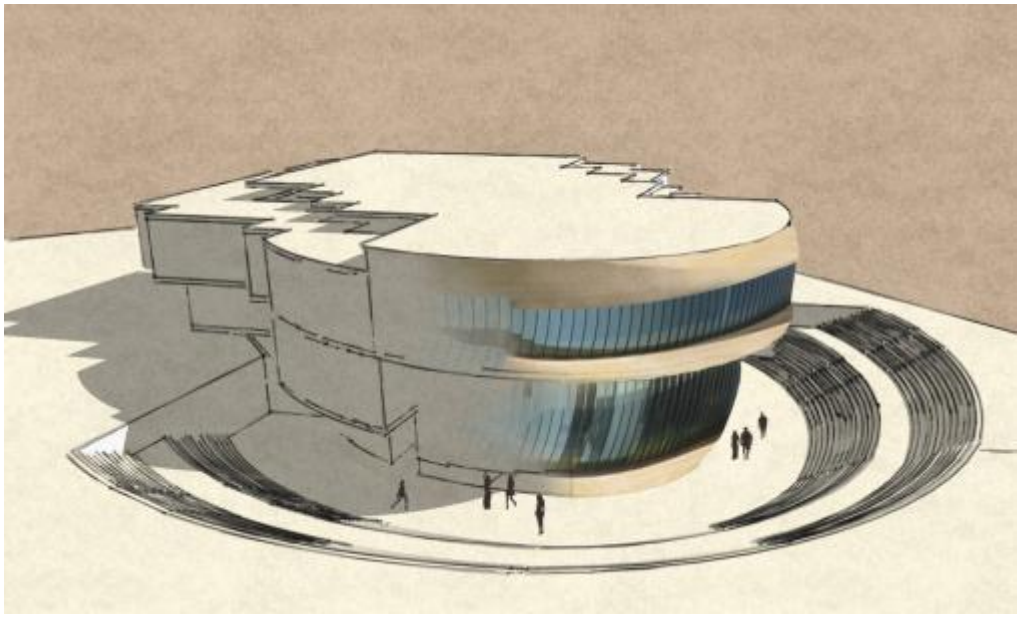
FORM EVOLUTION

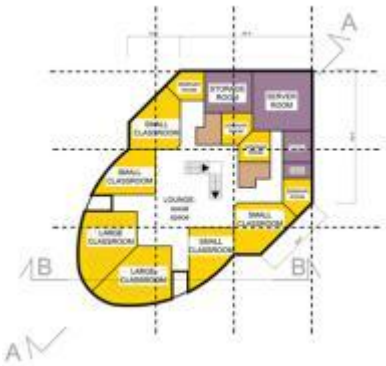
VERSION 01

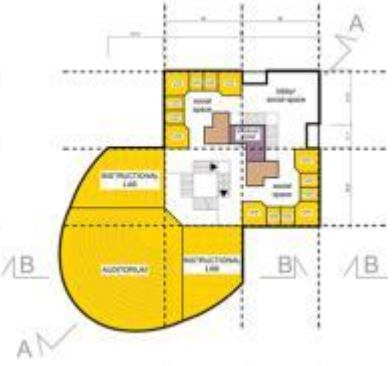


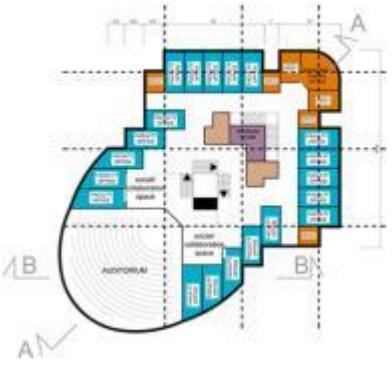
FORM EVOLUTION

VERSION 01









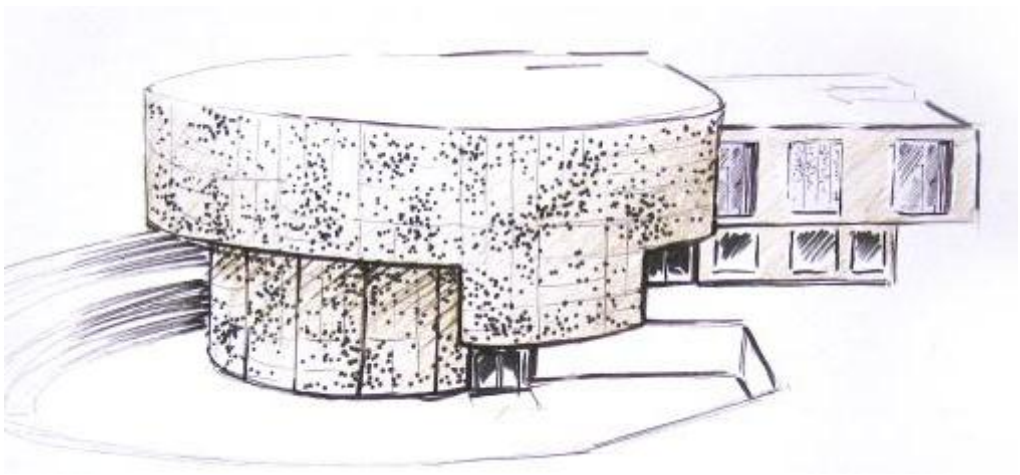
SUMMARY

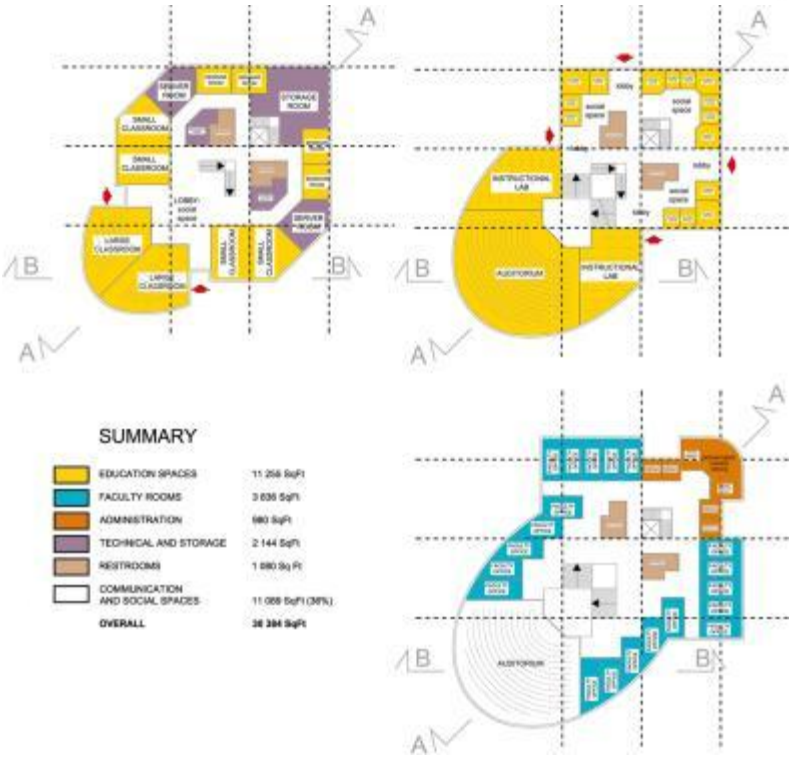
	EDUCATION SPACES	11 626 SqFt
	FACULTY ROOMS	3 934 SqFt
	ADMINISTRATION	980 SqFt
	TECHNICAL AND STORAGE	2 137 SqFt
	SANITARY	925 Sq Ft
	COMMUNICATION AND SOCIAL SPACES	11 781 SqFt (37%)
	OVERALL	**31 363 SqFt**

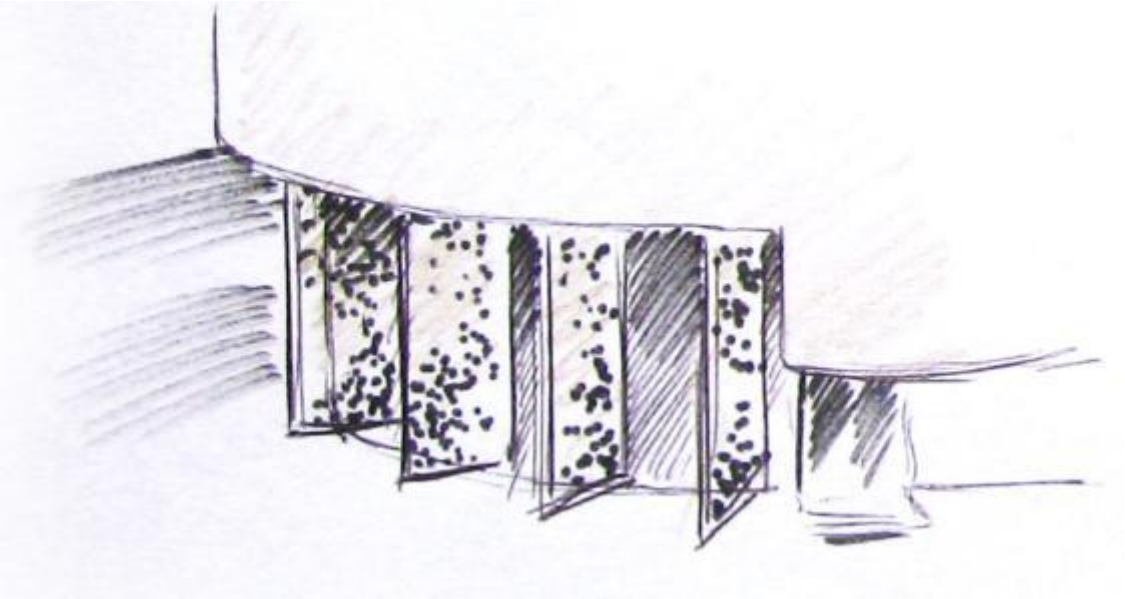
REVISED FOR
AESTHETICAL REASONS

FORM EVOLUTION

VERSION 02



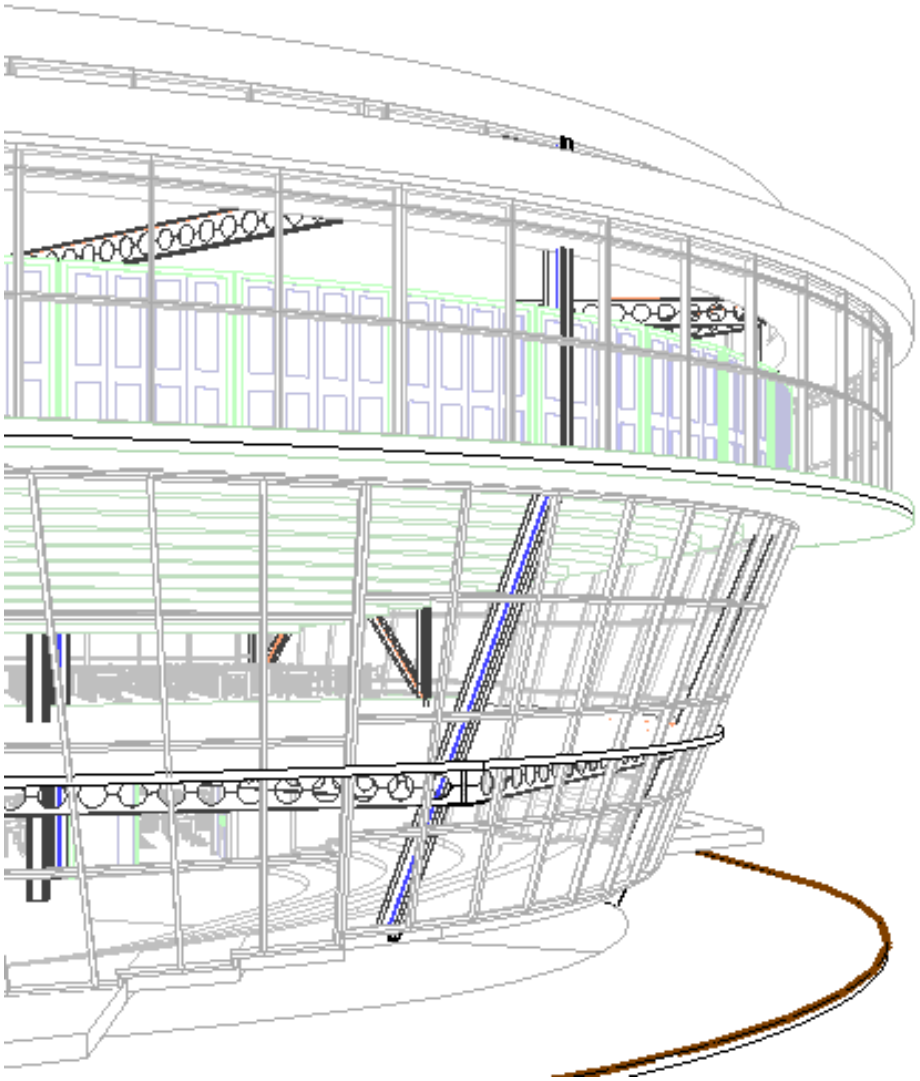




REVISED FOR
FUNCTIONAL REASONS

FORM EVOLUTION

VERSION 03

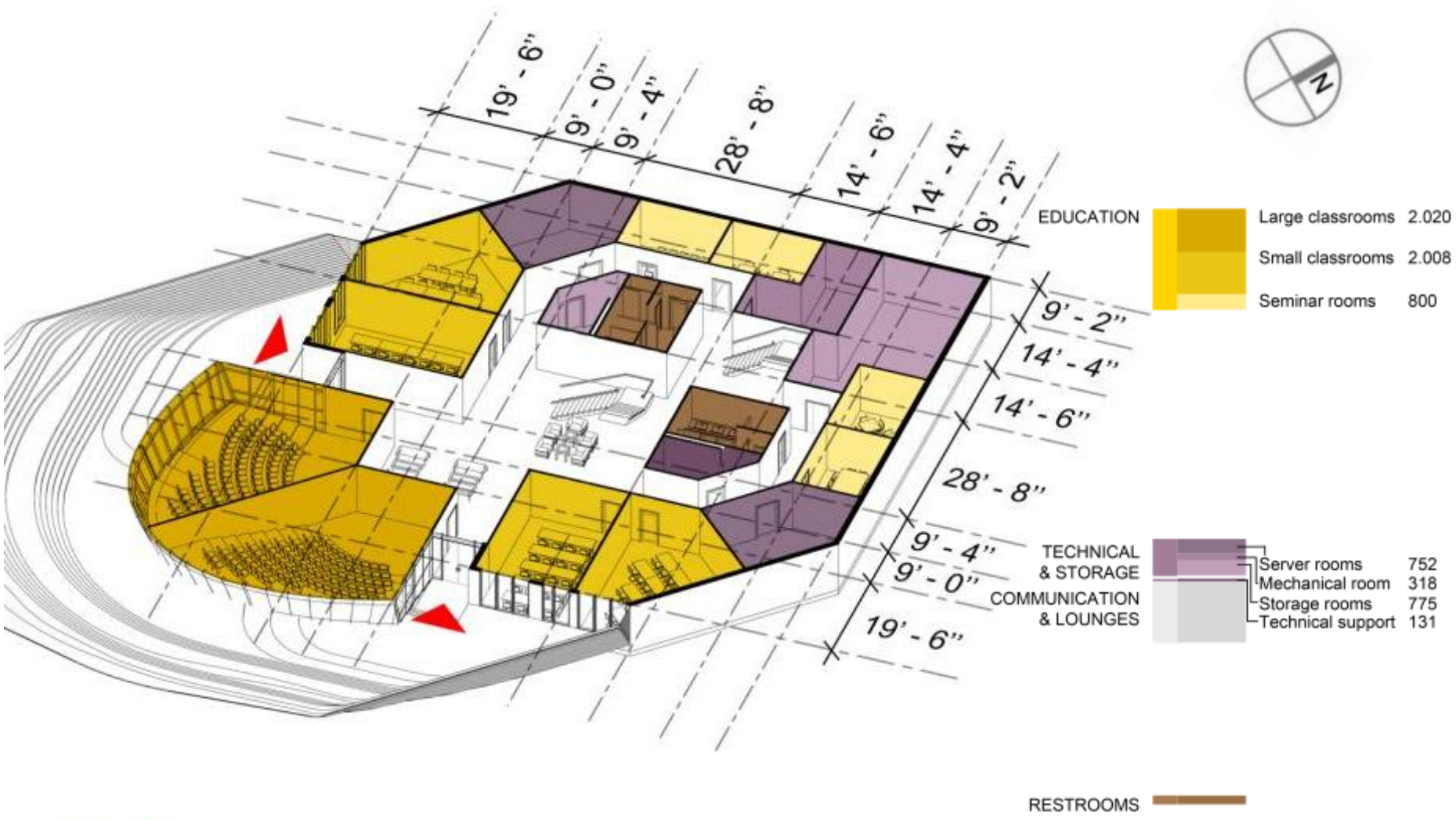


FORM EVOLUTION

VERSION 03

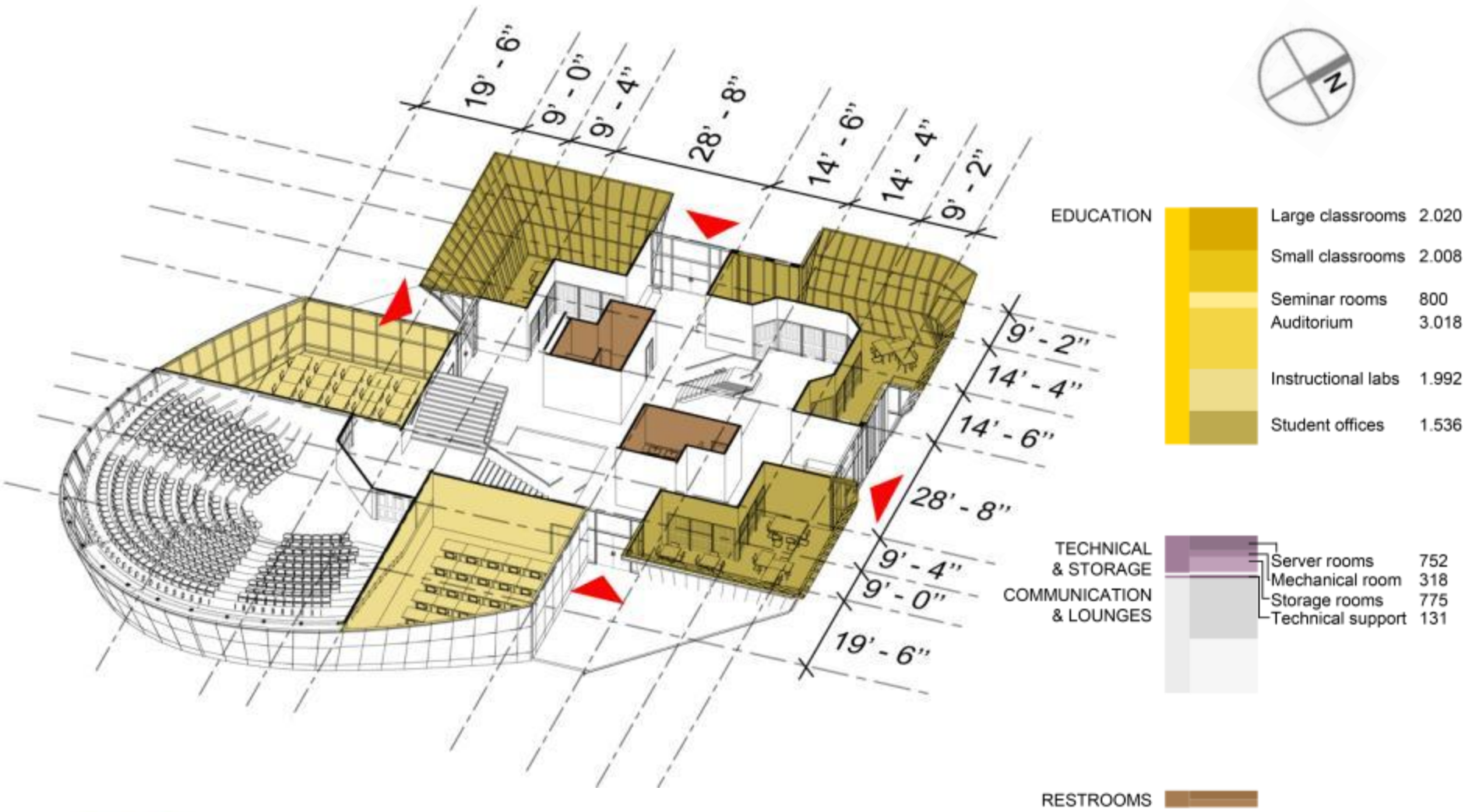
FORM EVOLUTION

VERSION 04



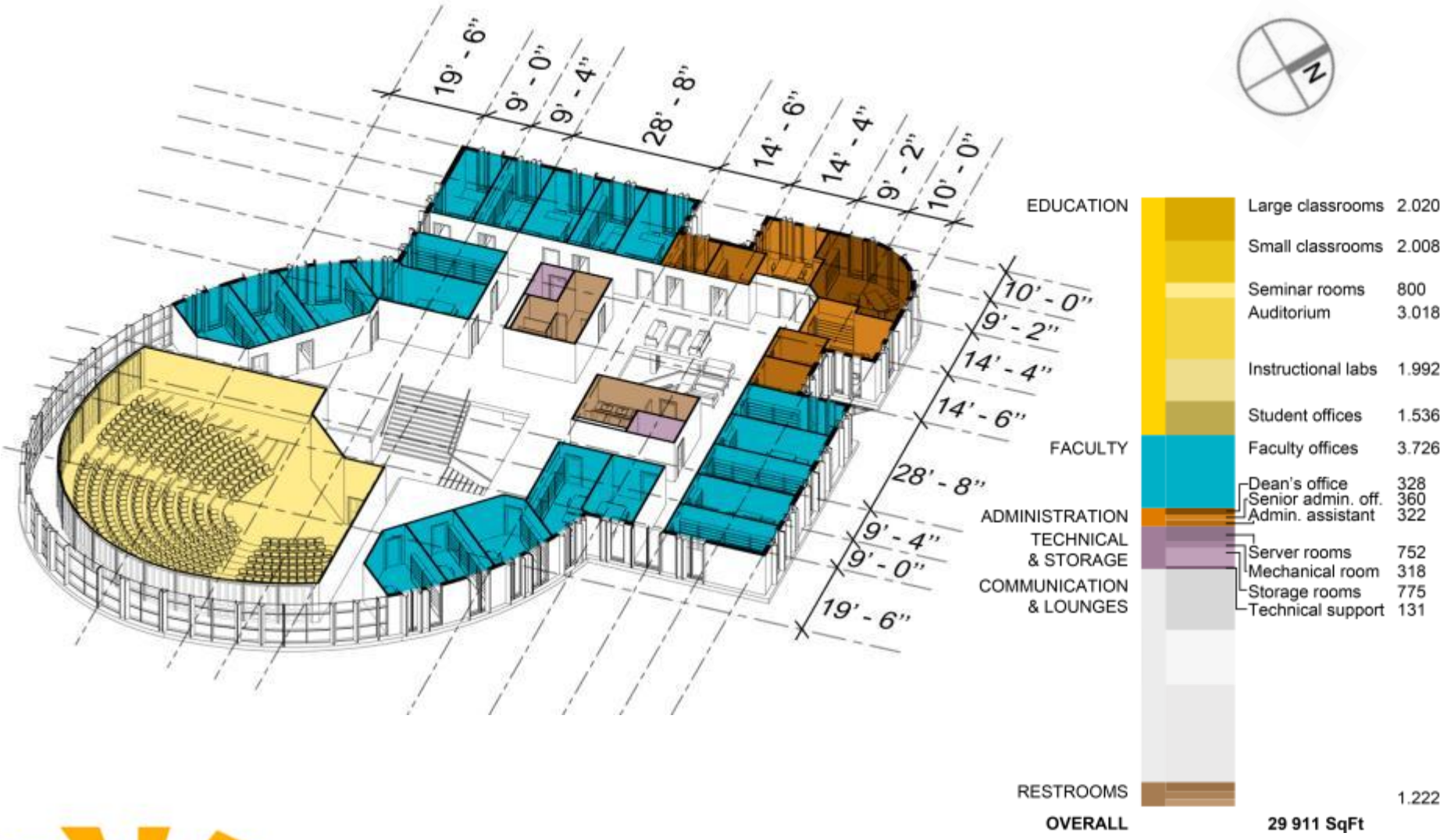
FUNCTIONAL ORGANIZATION

UNDERGROUND



FUNCTIONAL ORGANIZATION

GROUNDFLOOR



FUNCTIONAL ORGANIZATION

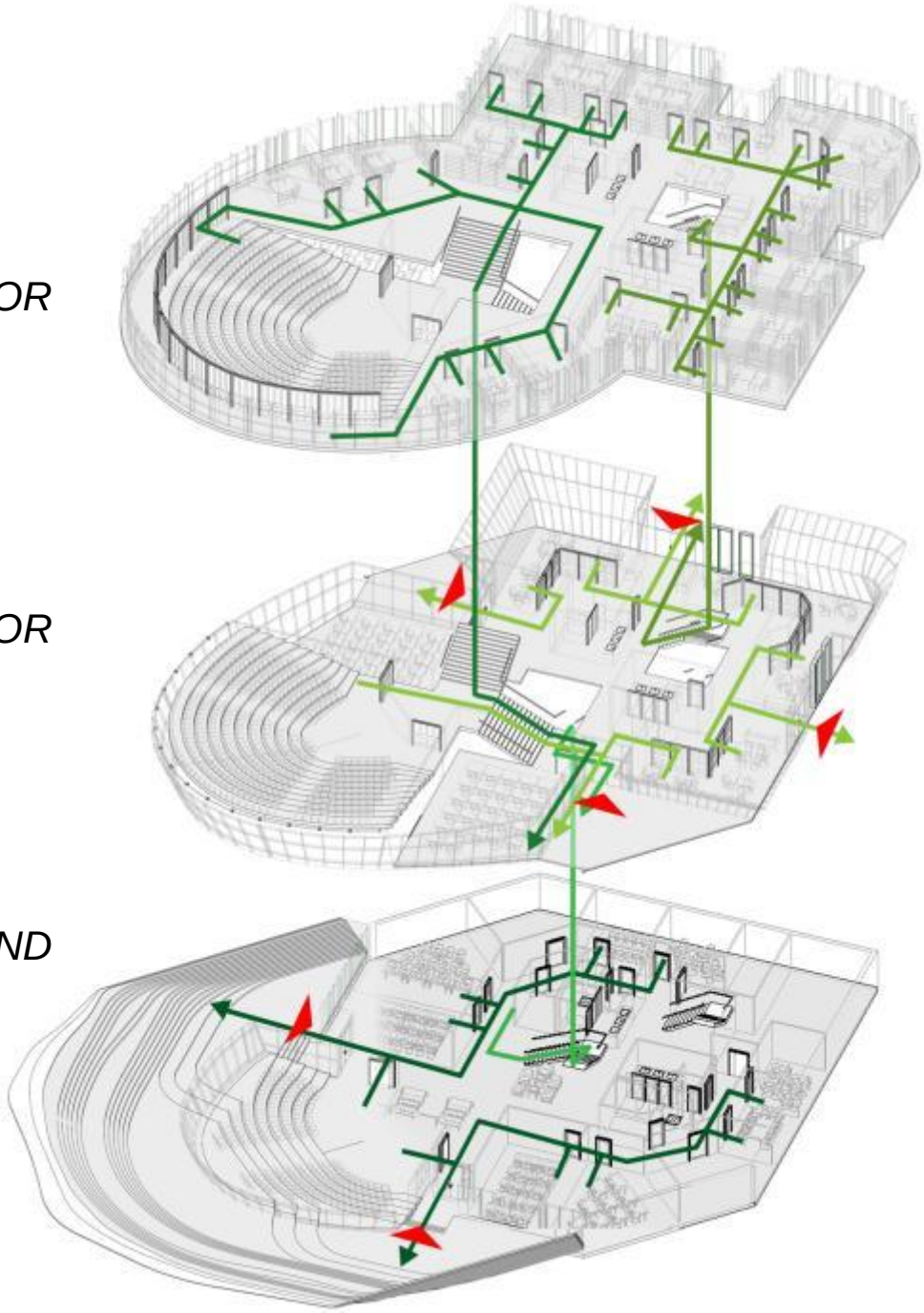
FIRST FLOOR

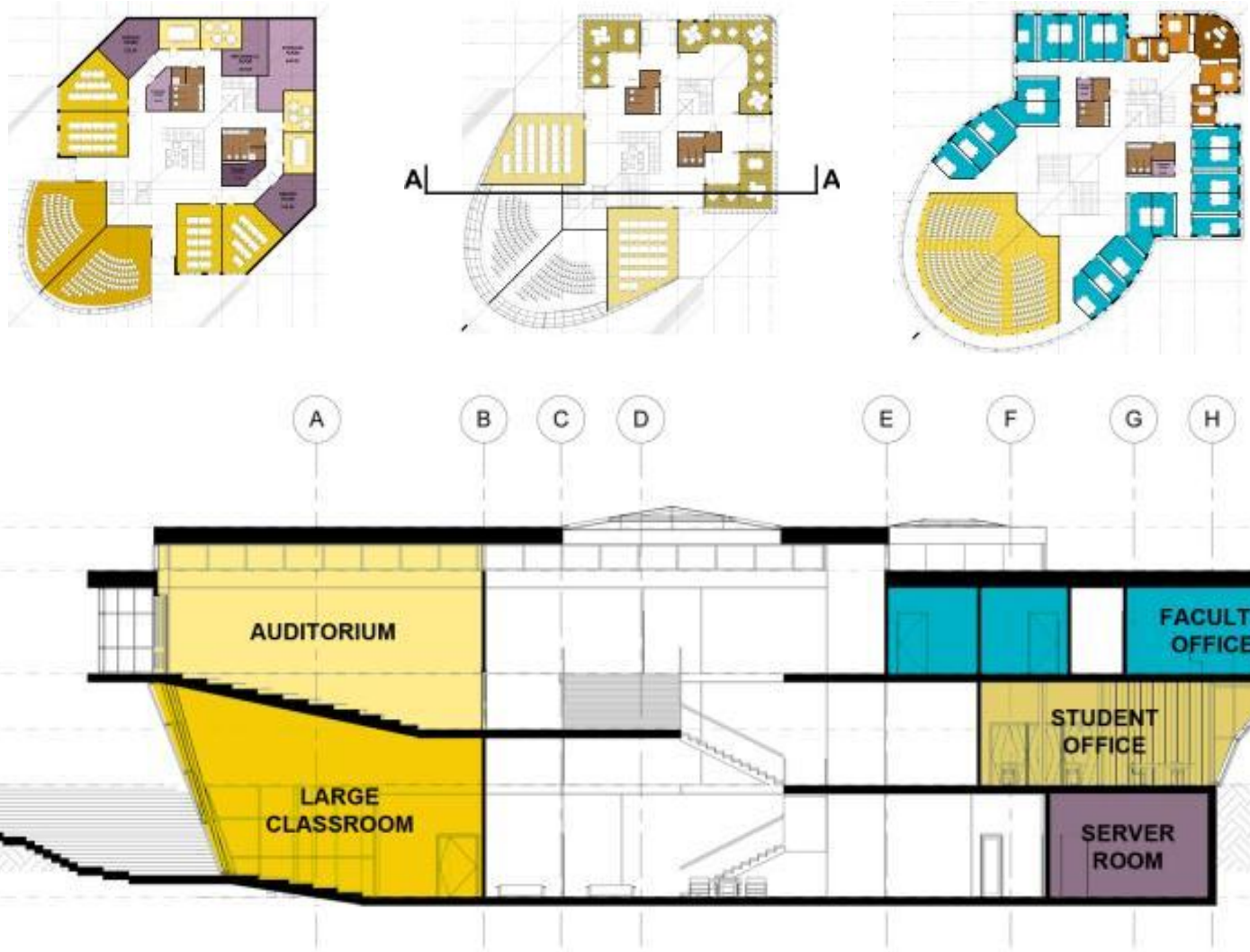
EGRESS SCHEME

FIRST FLOOR

GROUNDFLOOR

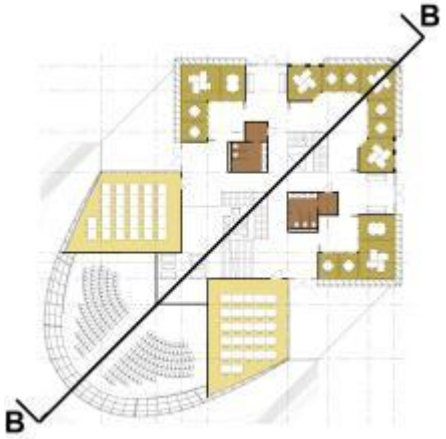
UNDERGROUND

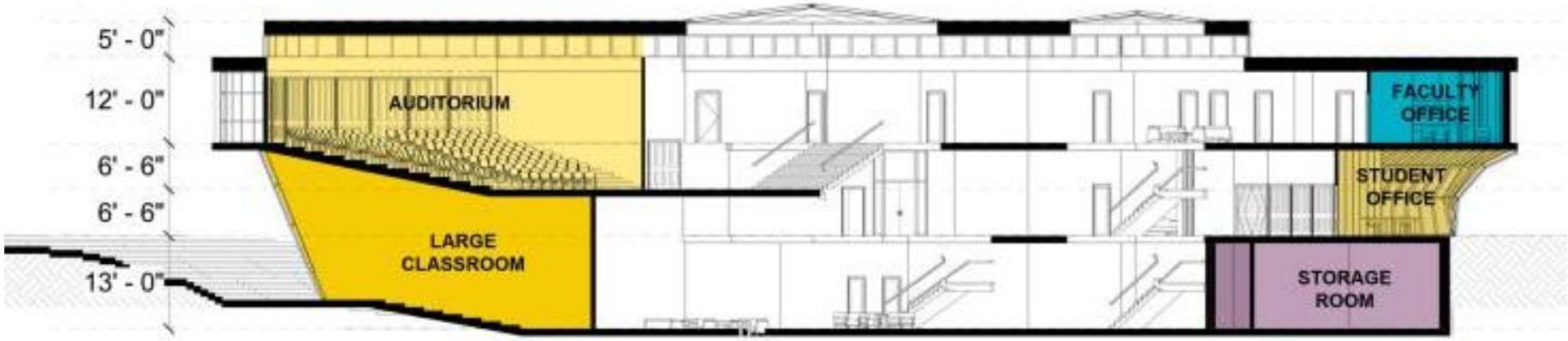




SECTIONS

SECTION A-A





SECTIONS

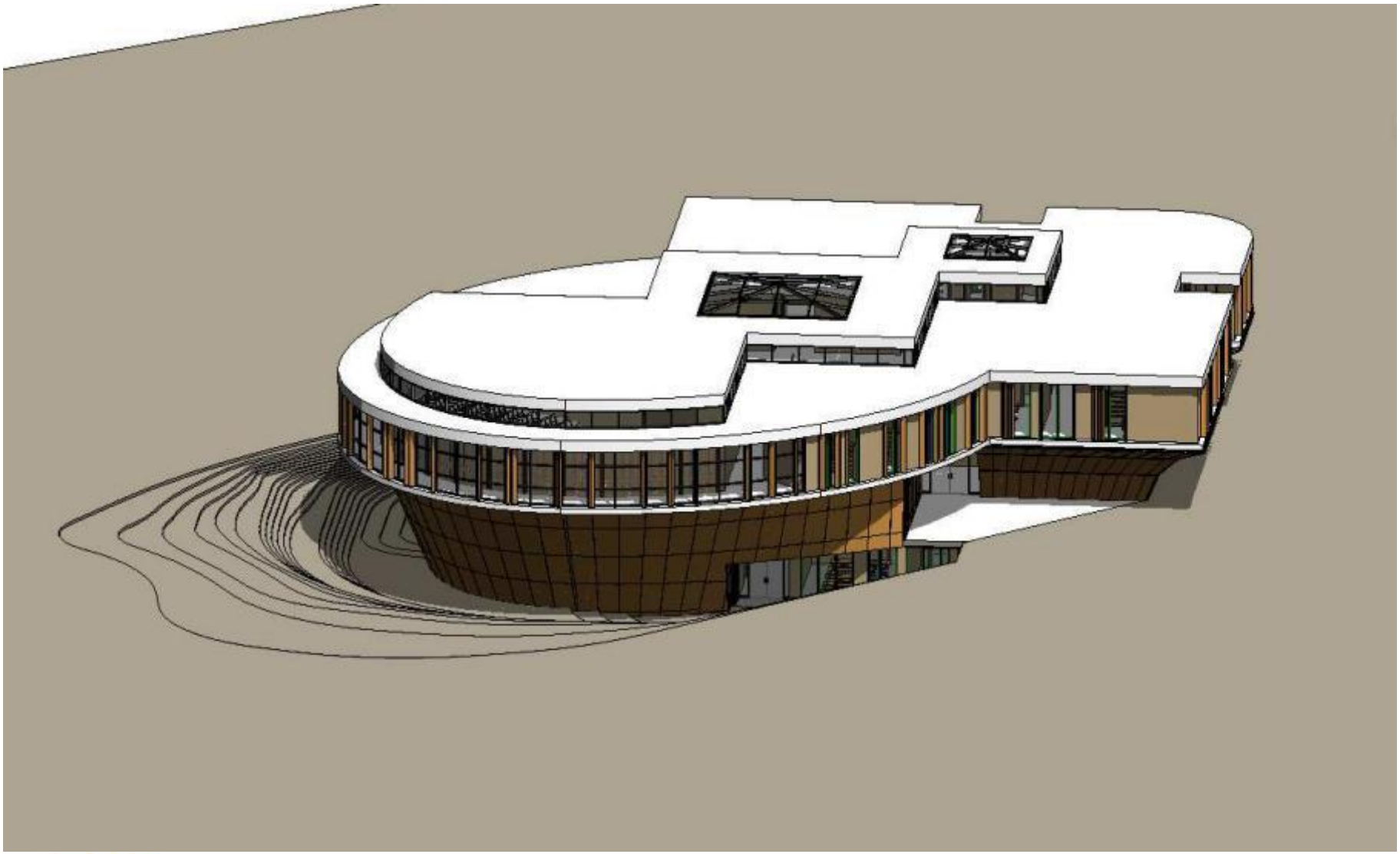
SECTION B-B

SUN ANALYSIS

06:00 AM

SUN ANALYSIS

08:00 AM



SUN ANALYSIS

10:00 AM

SUN ANALYSIS

12:00 PM

SUN ANALYSIS

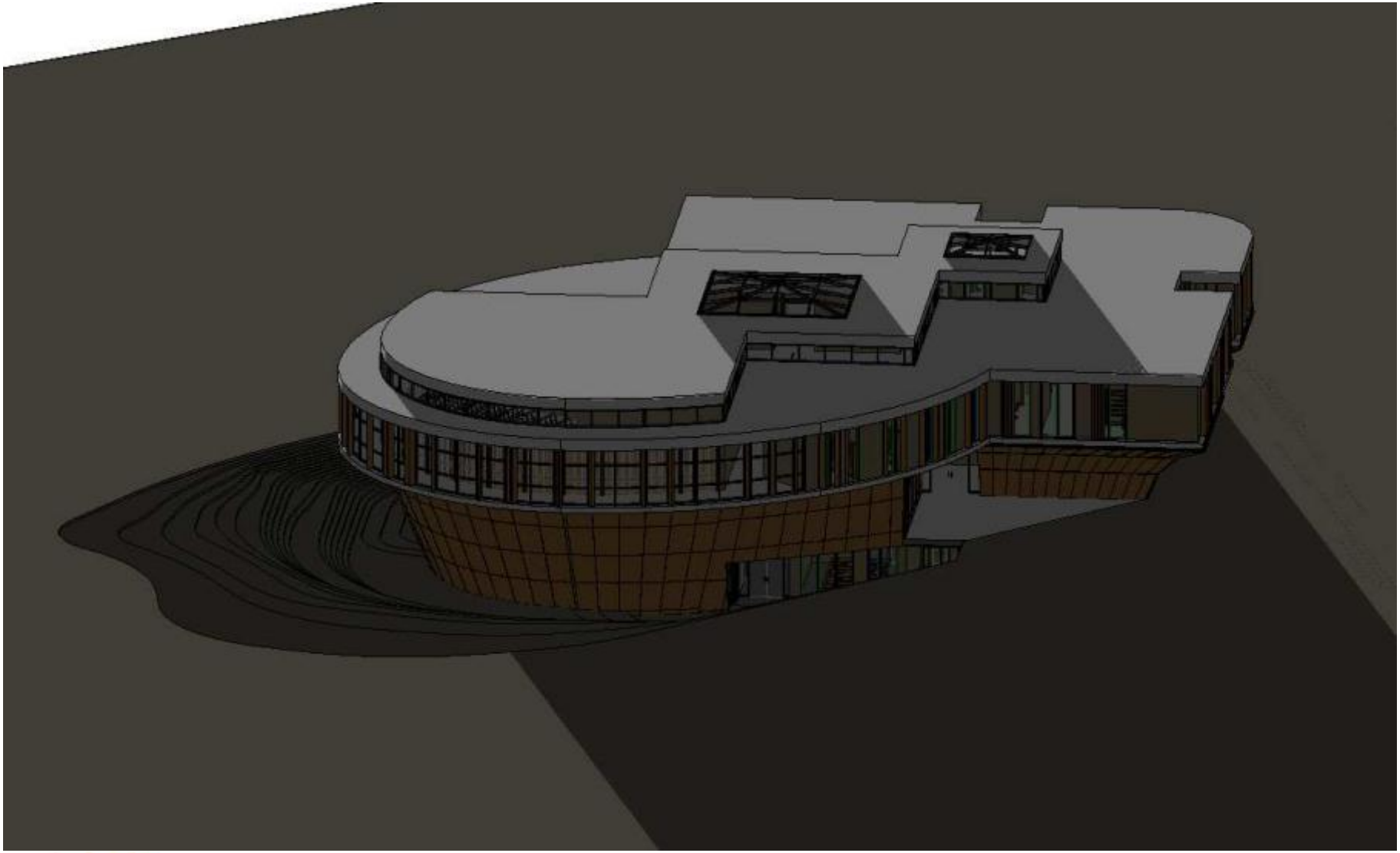
02:00 PM

SUN ANALYSIS

04:00 PM

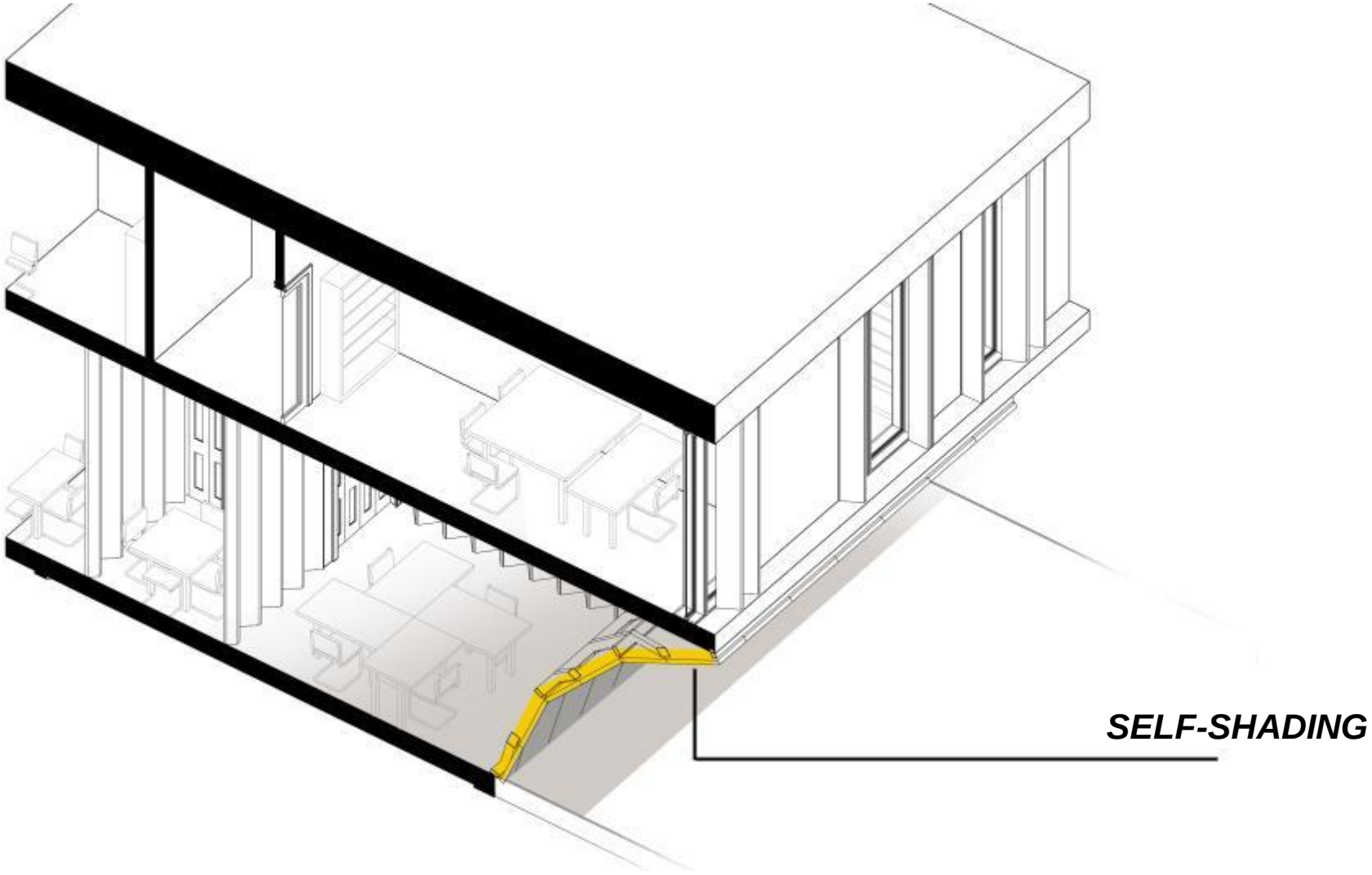
SUN ANALYSIS

06:00 PM

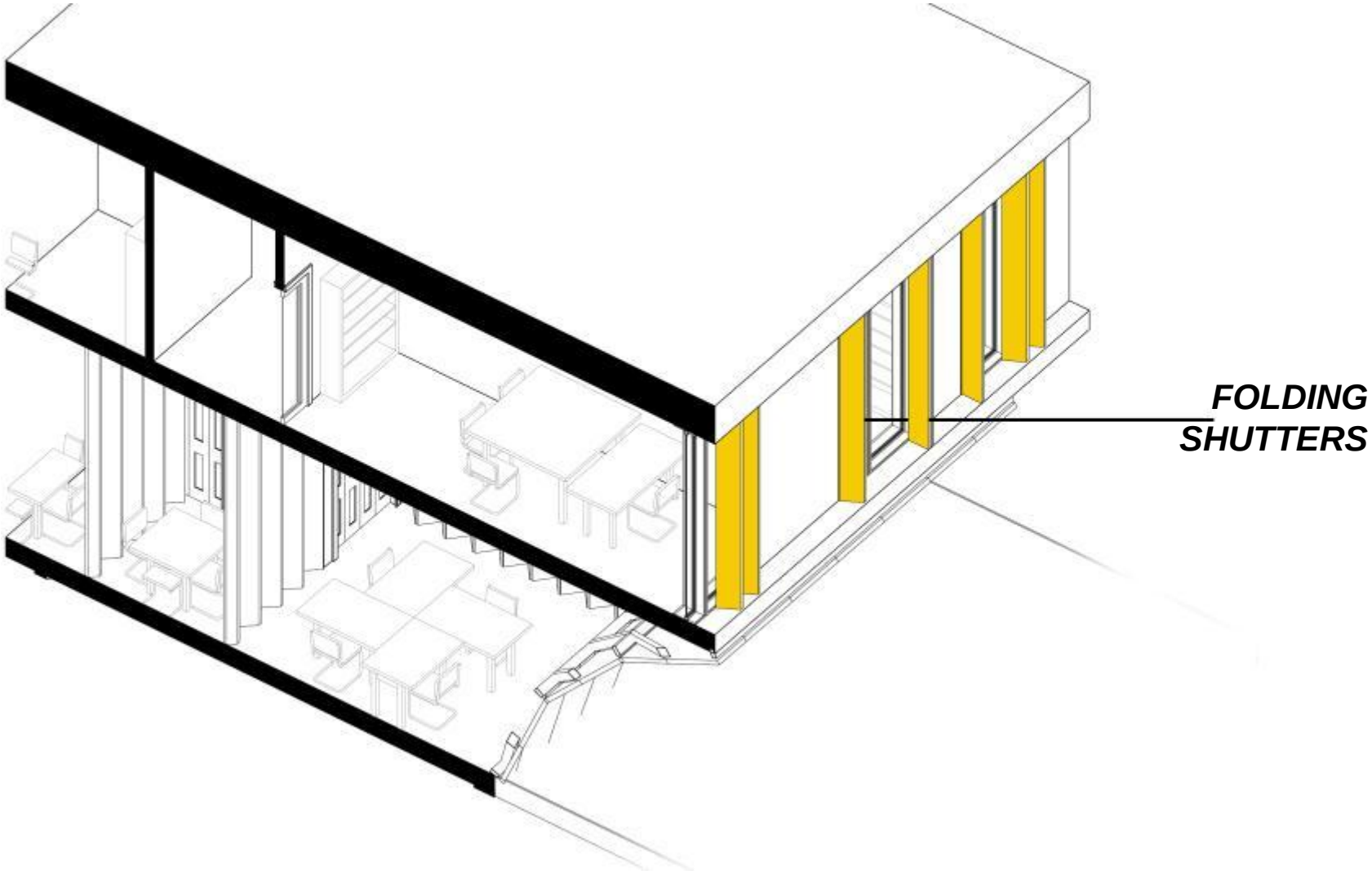


SUN ANALYSIS

08:00 PM



SUN CONTROL



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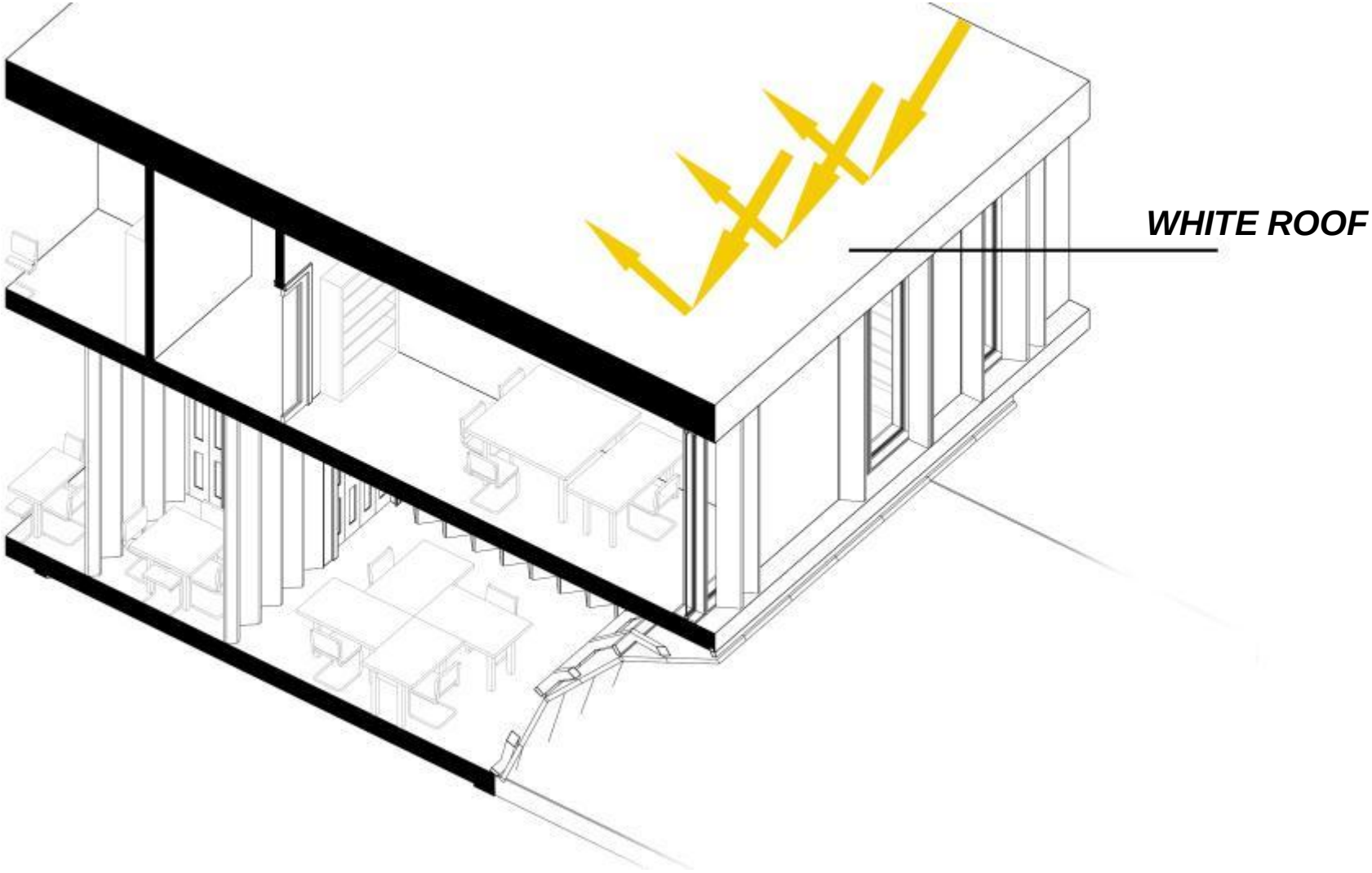
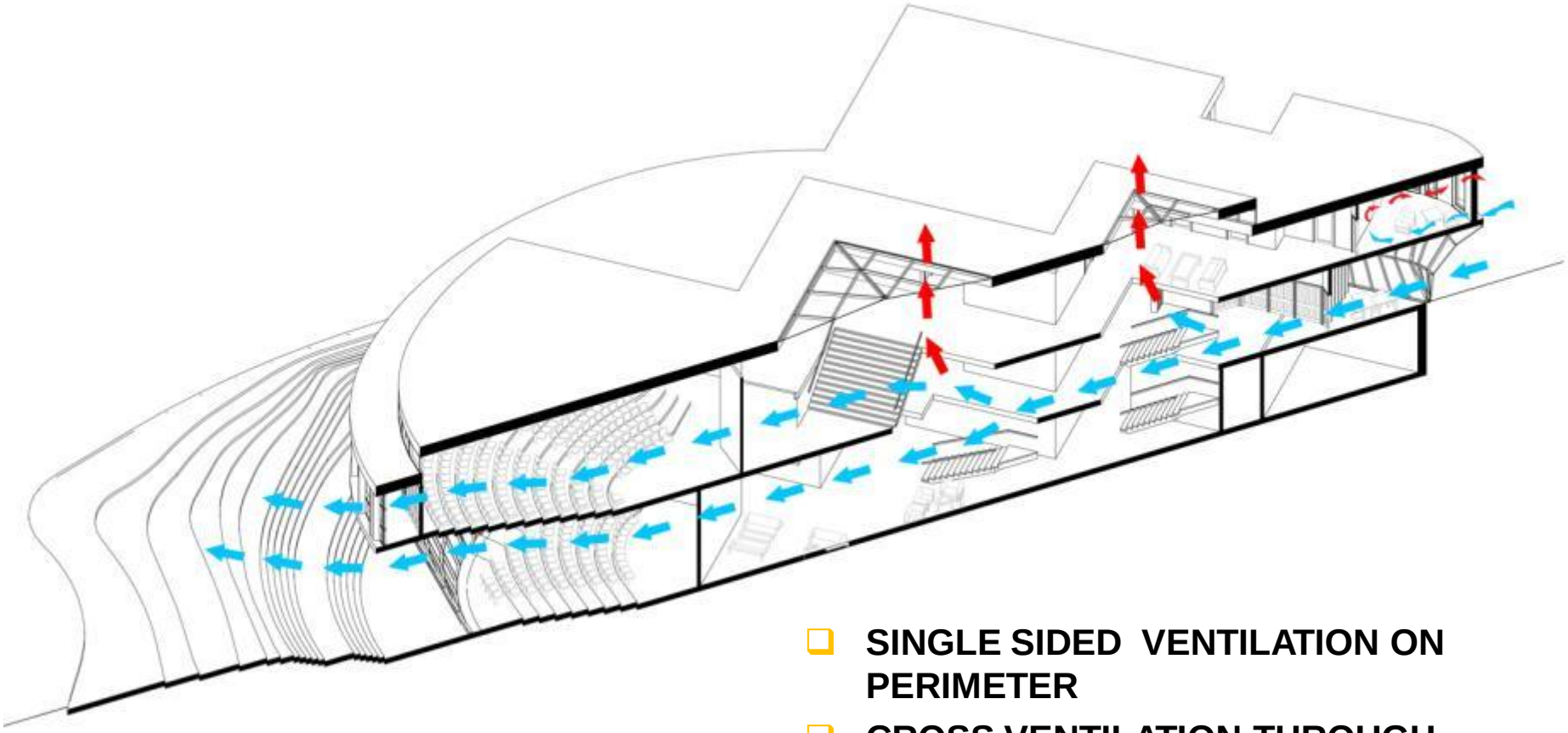
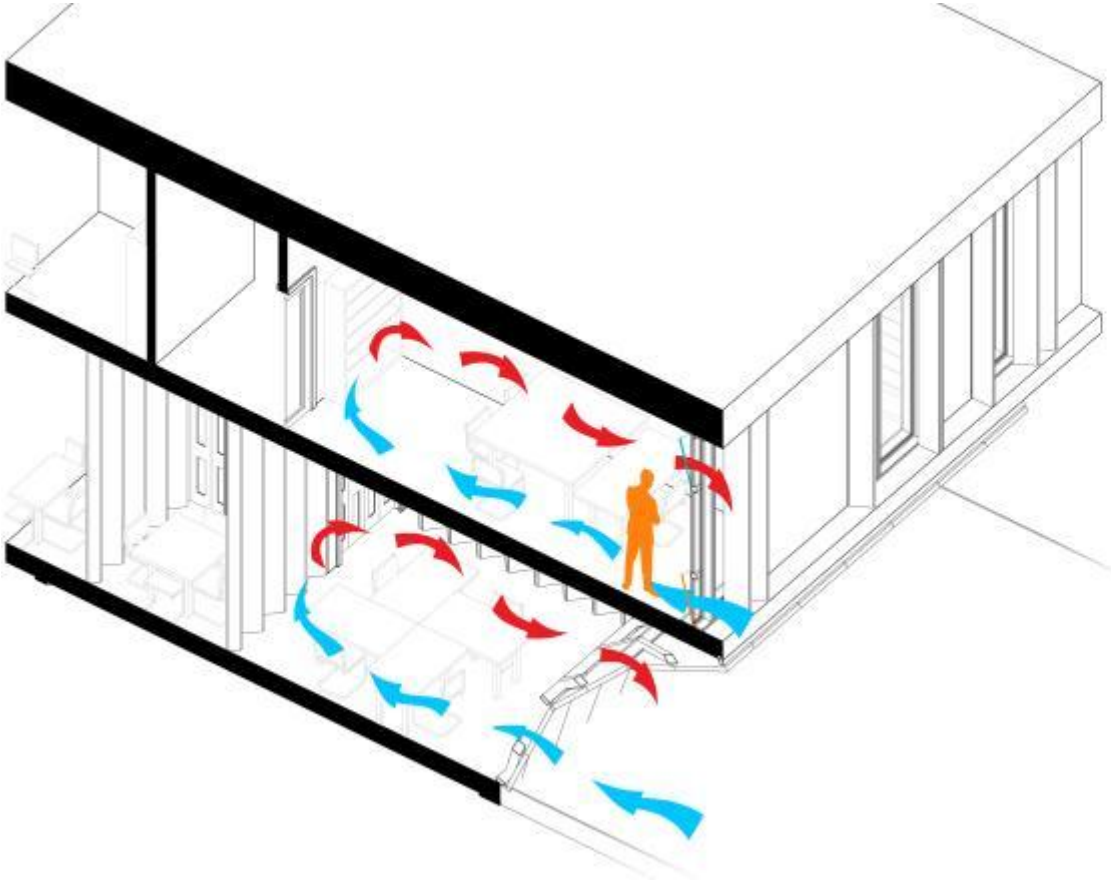


SUN CONTROL

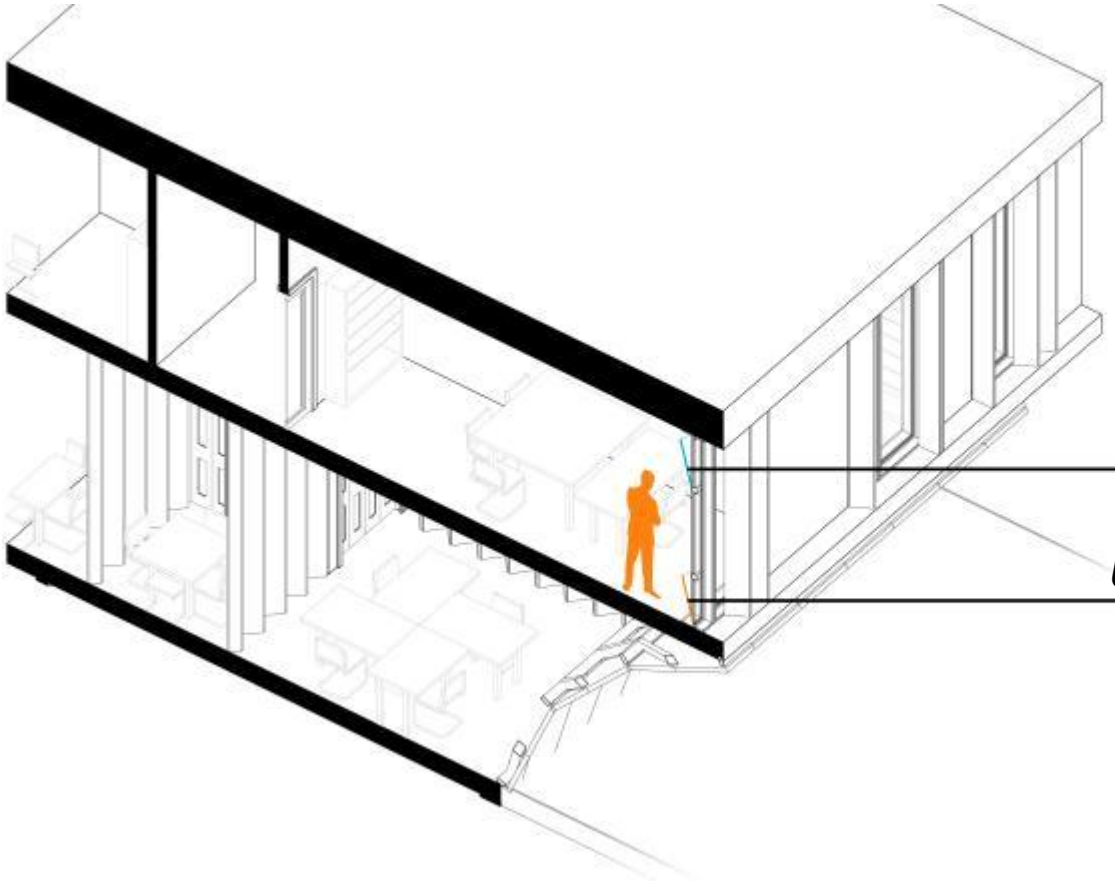


- SINGLE SIDED VENTILATION ON PERIMETER
- CROSS VENTILATION THROUGH OPEN SPACES

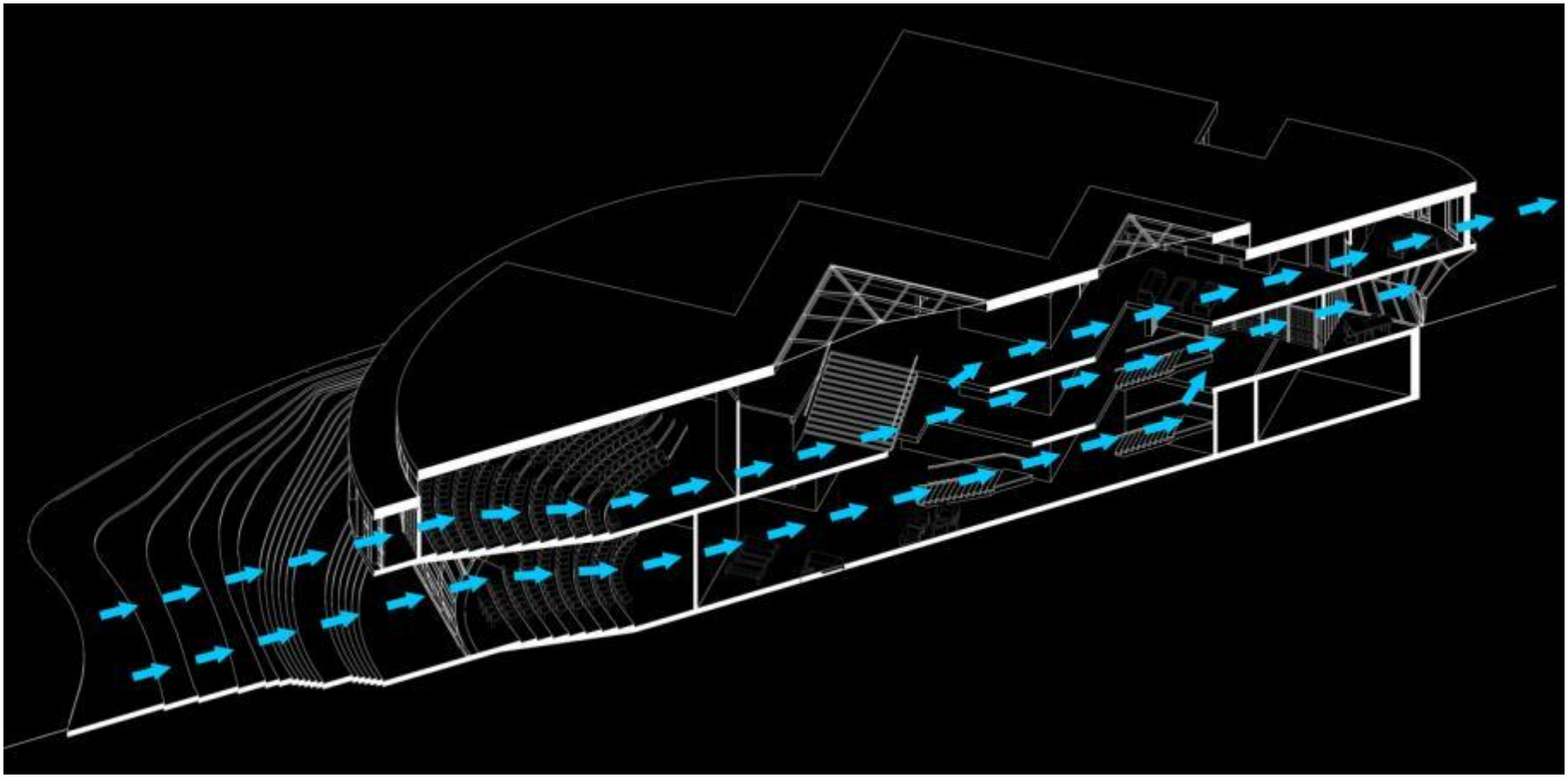
NATURAL VENTILATION



NATURAL VENTILATION

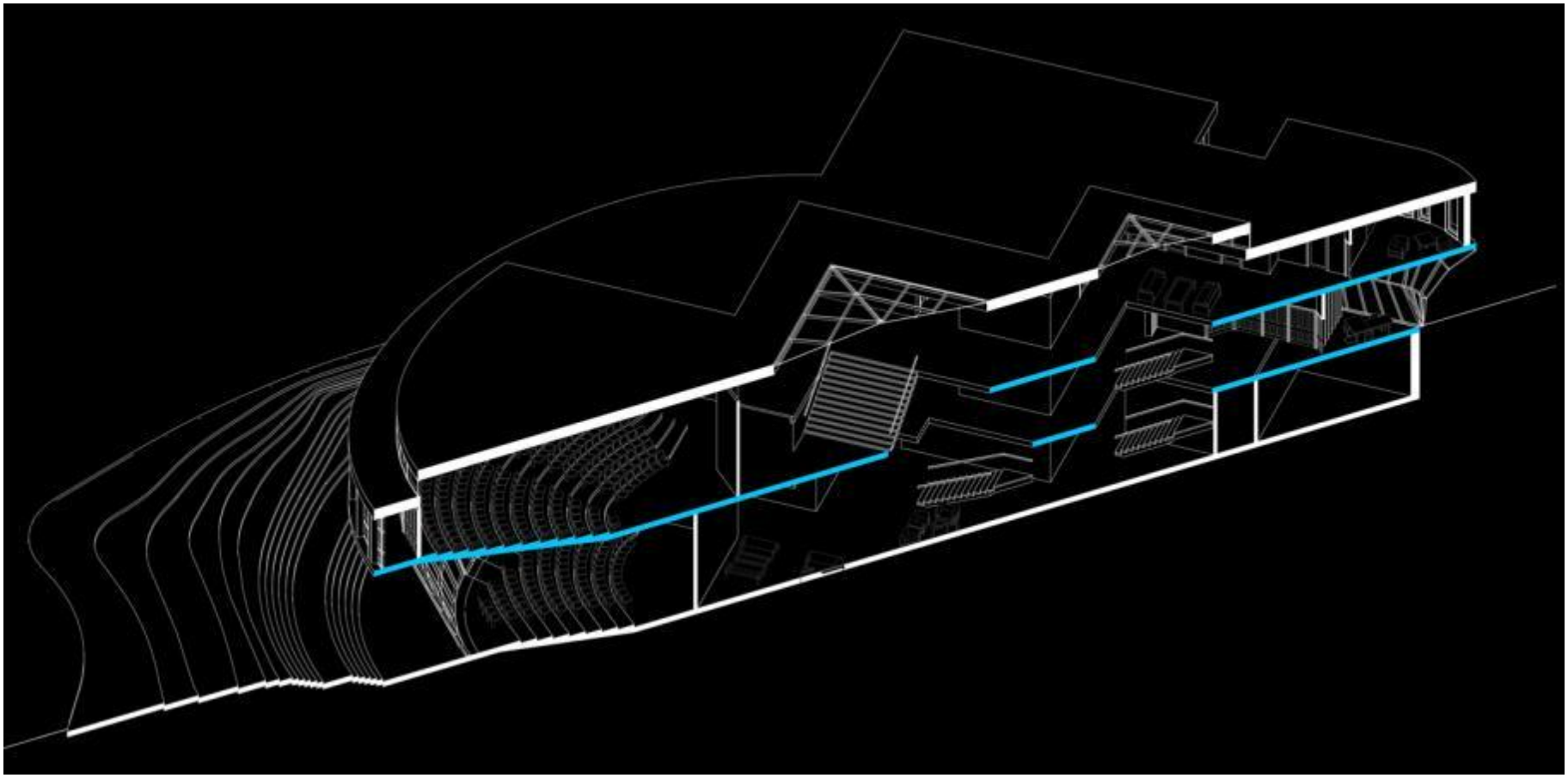


NATURAL VENTILATION



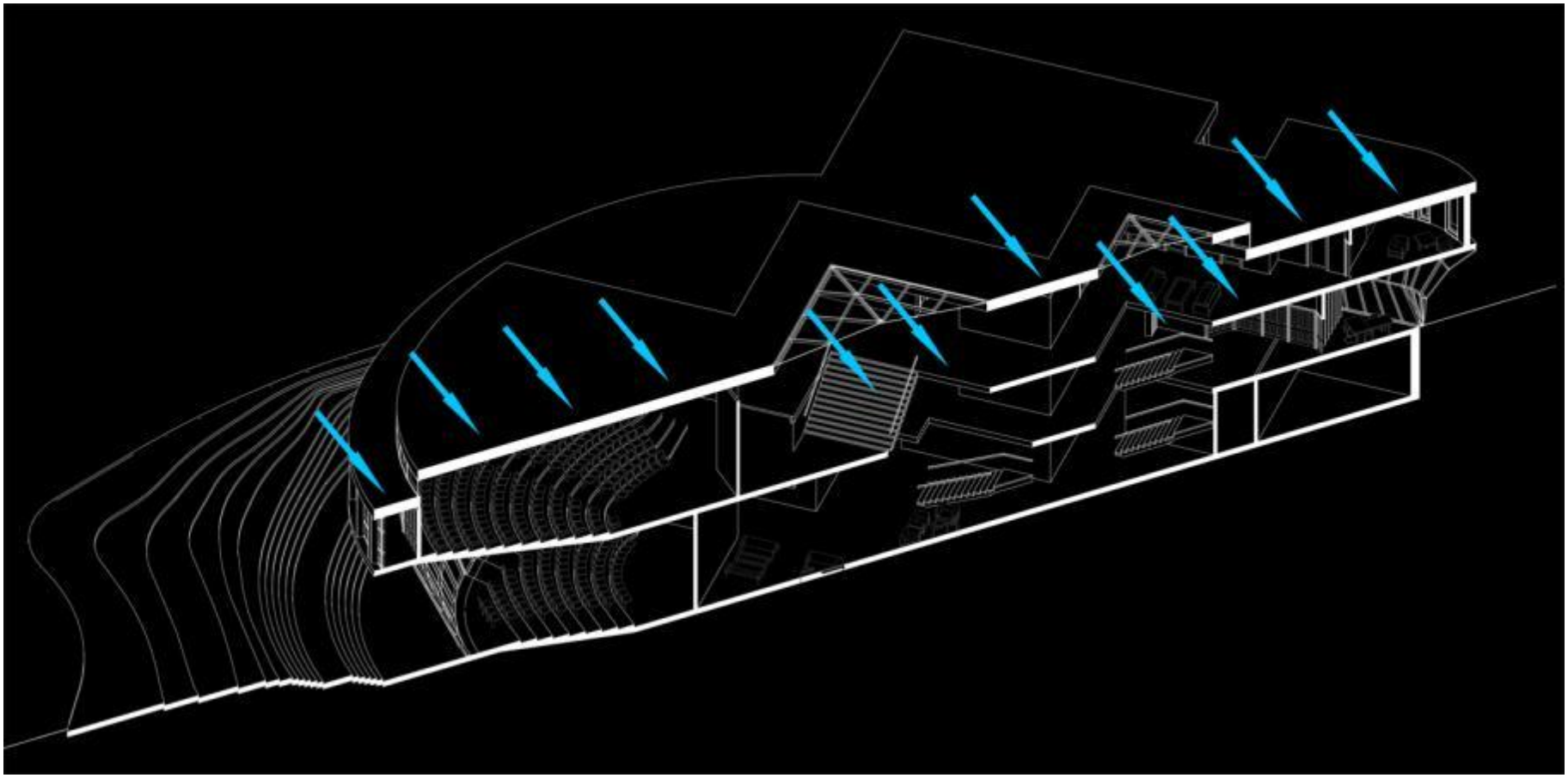
NATURAL VENTILATION

NIGHT COOLING



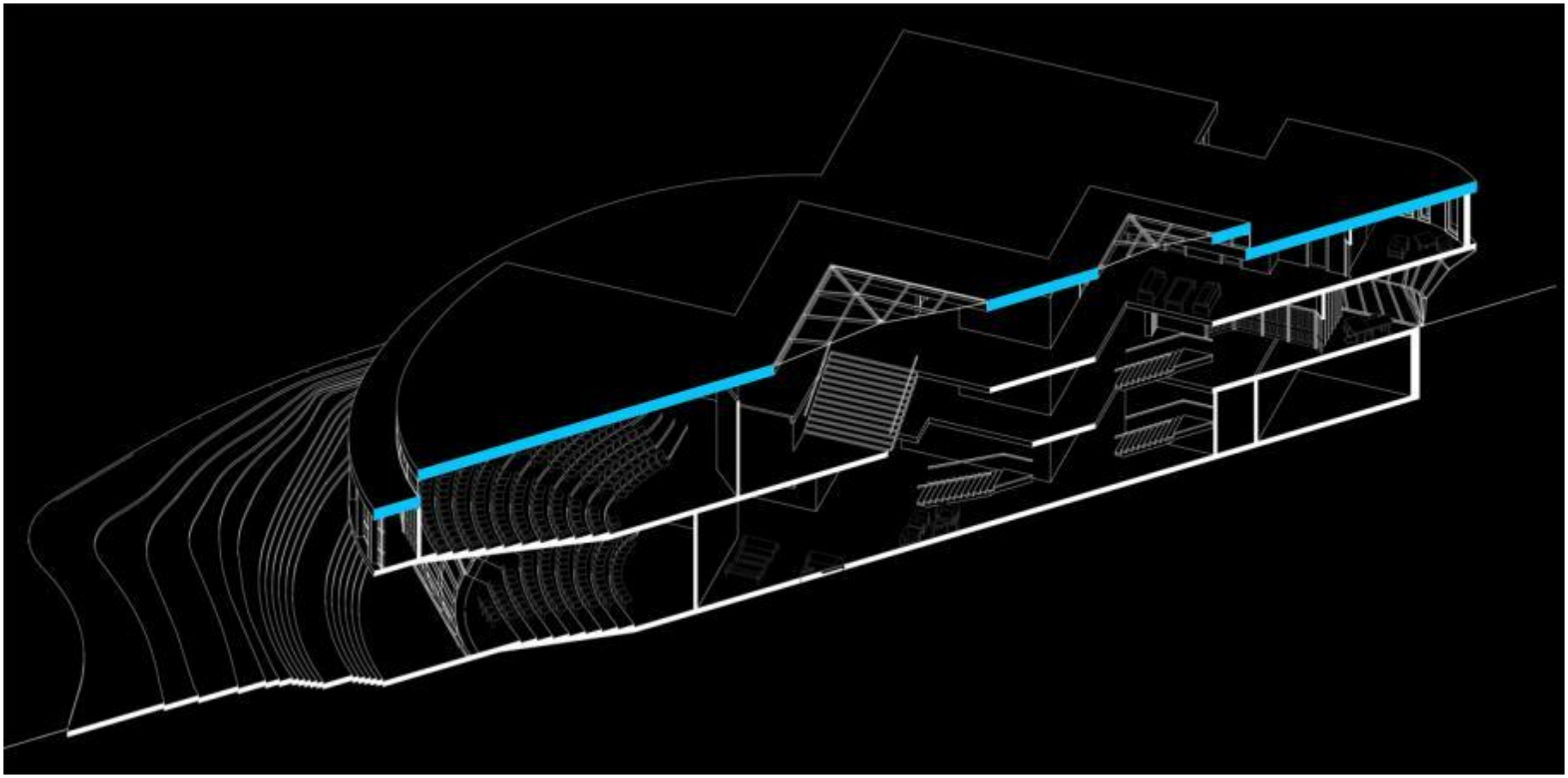
NATURAL VENTILATION

NIGHT COOLING



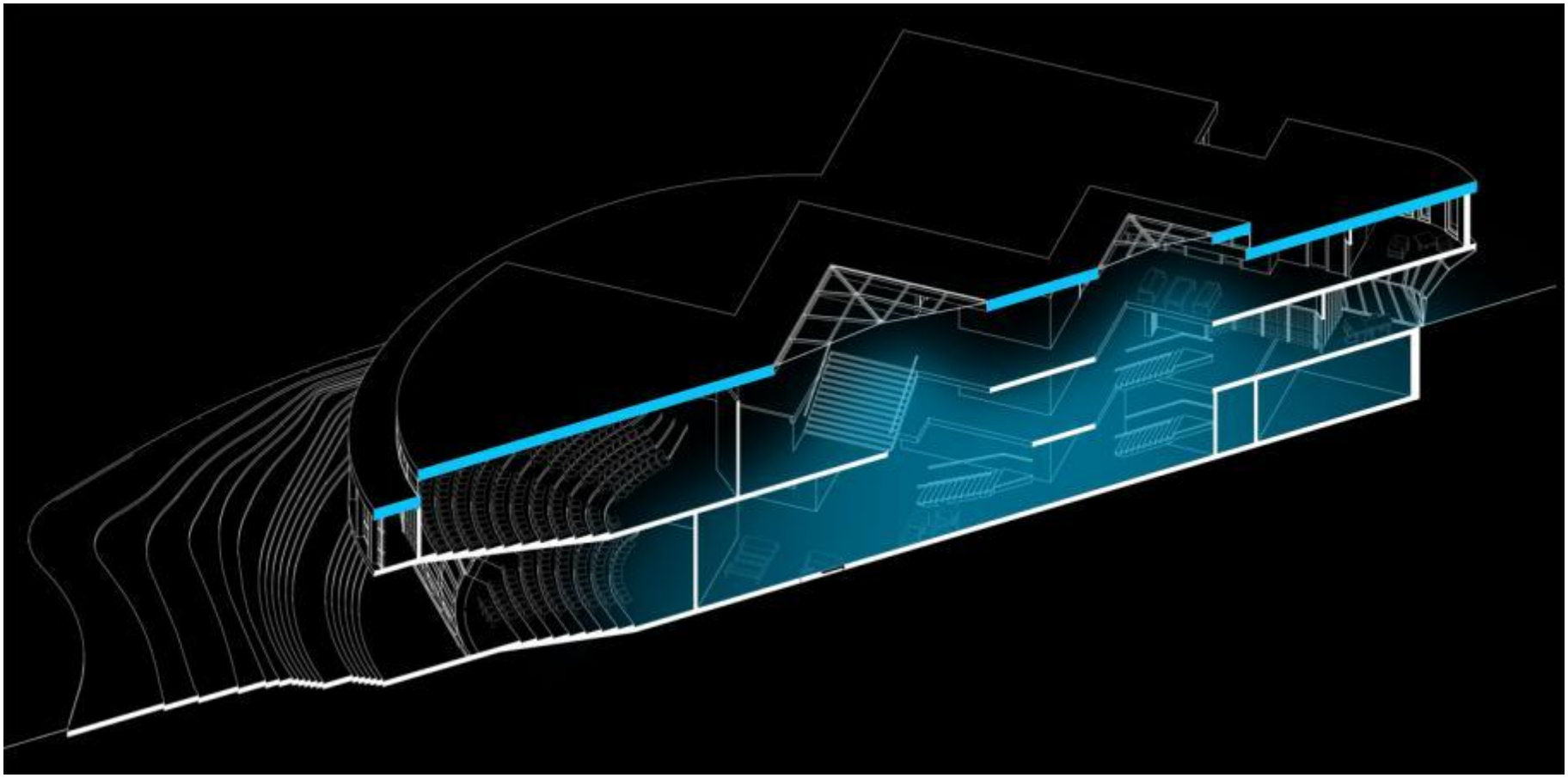
NATURAL VENTILATION

NIGHT COOLING



NATURAL VENTILATION

NIGHT COOLING



NATURAL VENTILATION

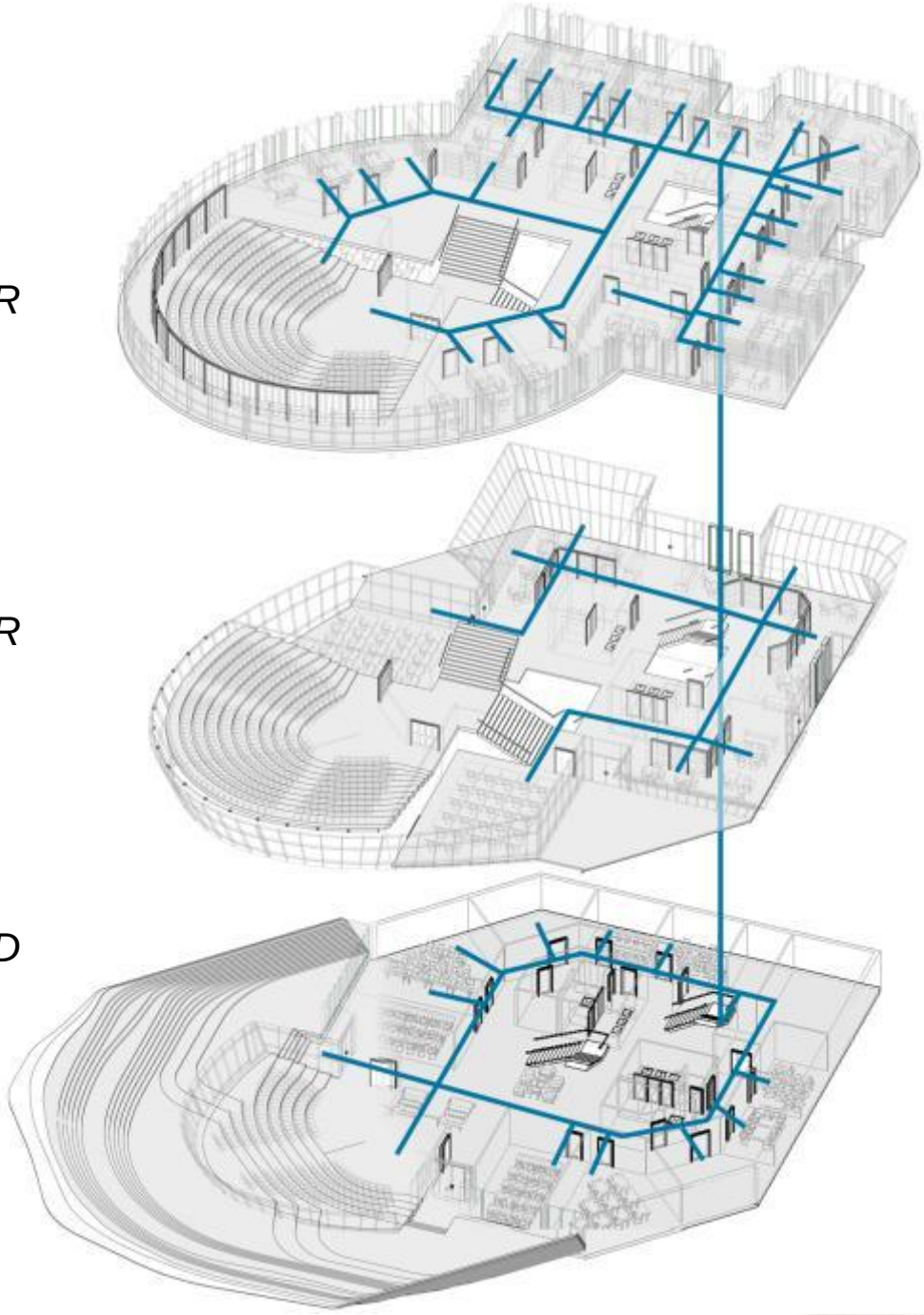
NIGHT COOLING

DUCTWORK SCHEME

FIRST FLOOR

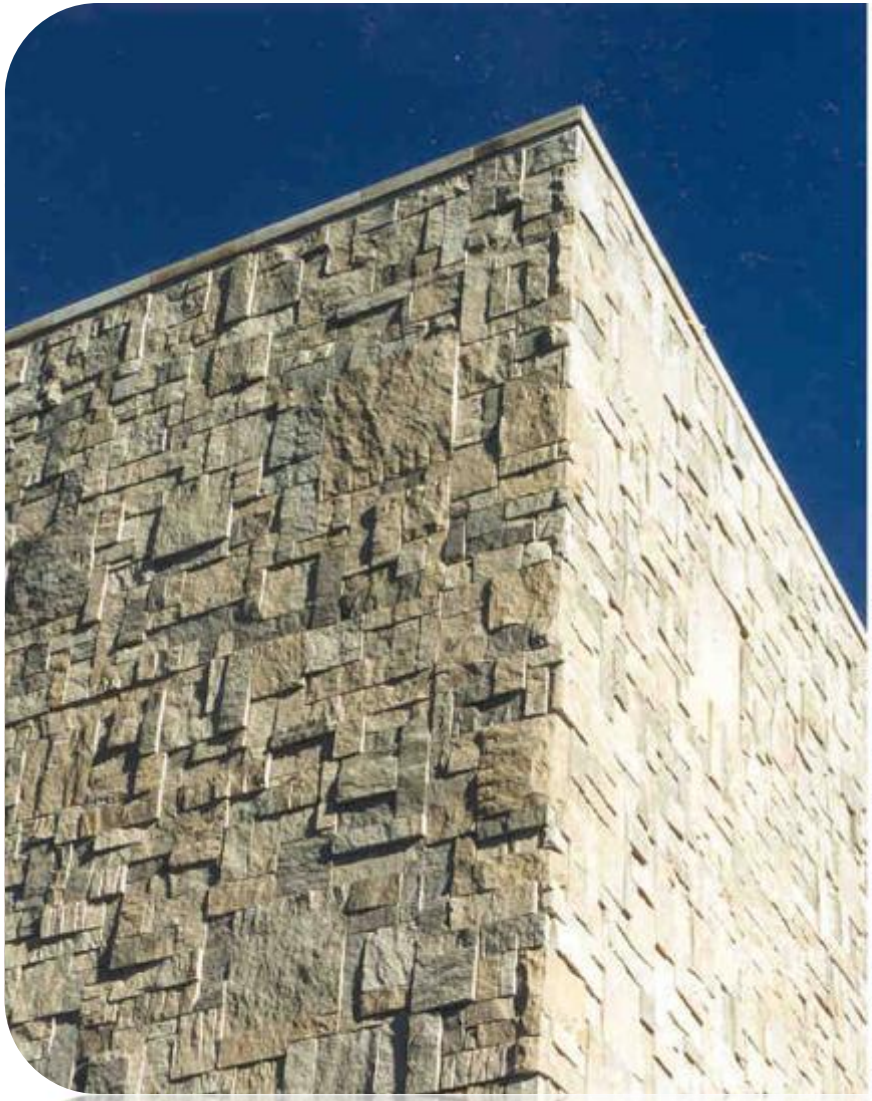
GROUNDFLOOR

UNDERGROUND



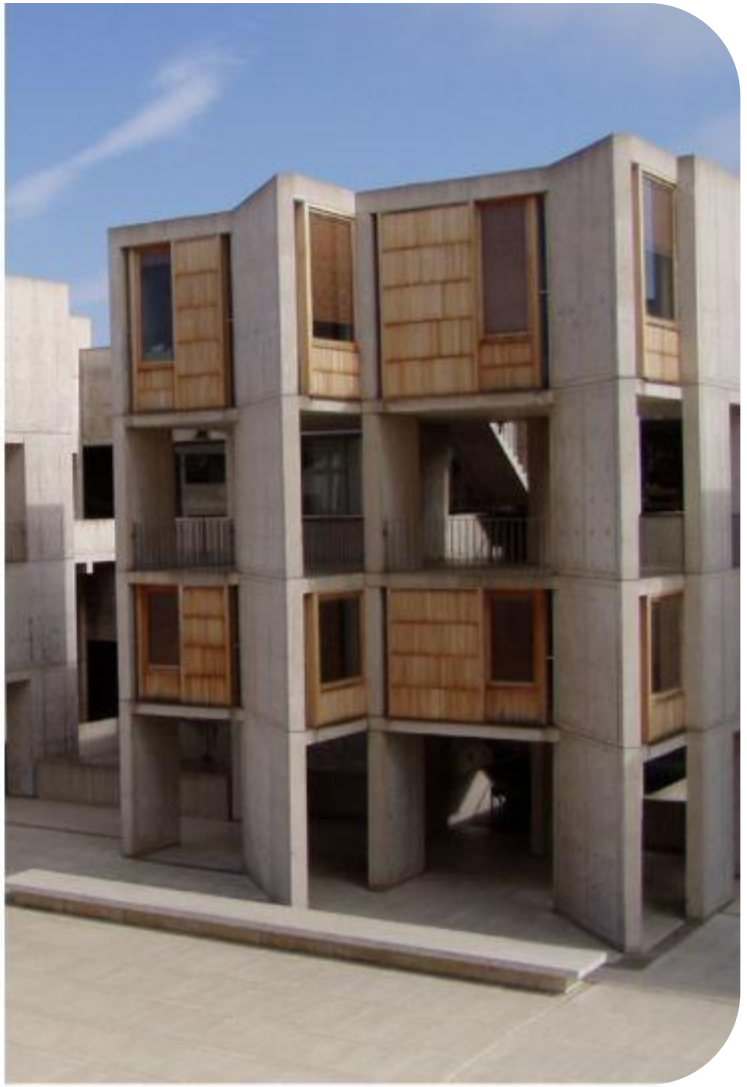
MATERIALS INSPIRATION

STUCCO WALLS



MATERIALS INSPIRATION

STONE VENEER



MATERIALS INSPIRATION

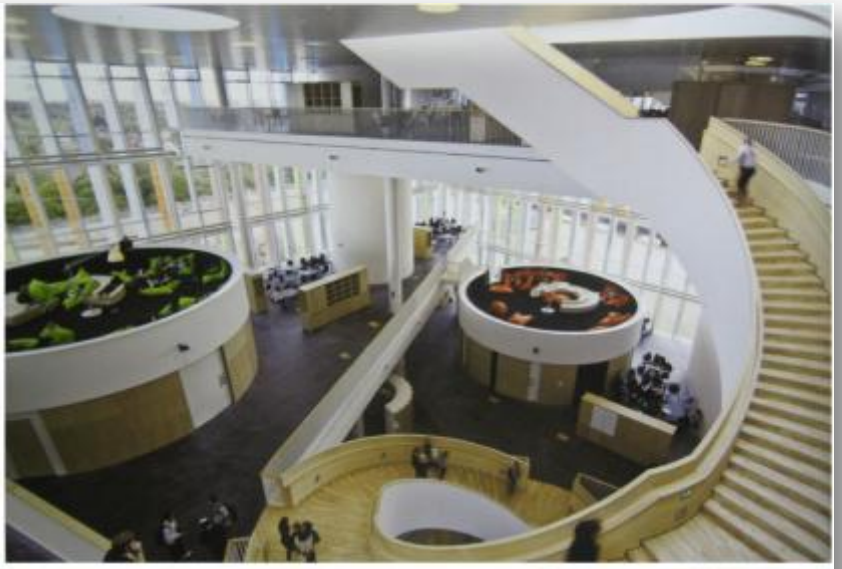
WOOD

TERMITE ENTERPRISE

ELEVATIONS

TERMITE ENTERPRISE

EXTERIOR VIEW

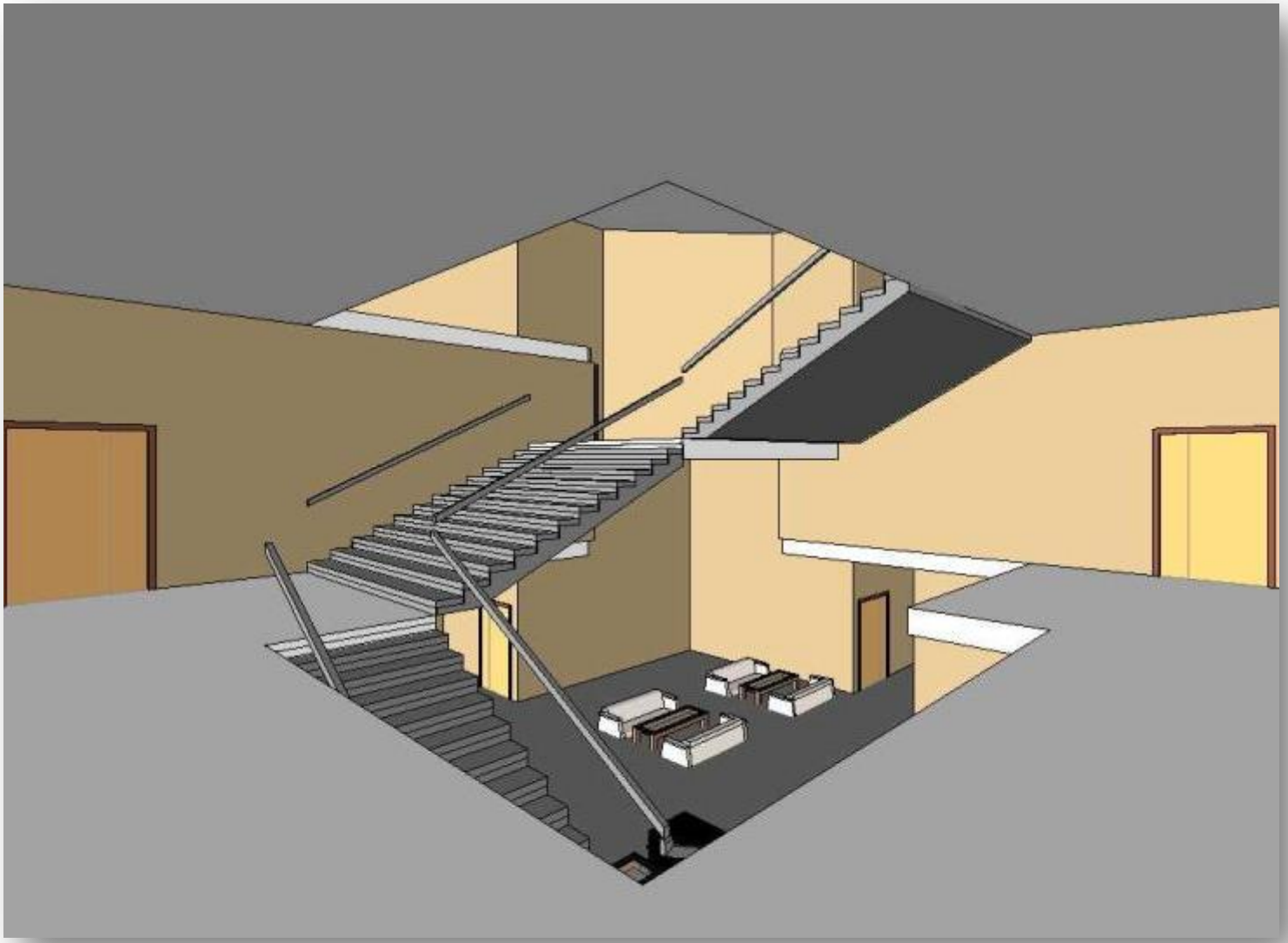


TERMITE ENTERPRISE

INTERIOR INSPIRATIONS

TERMITE ENTERPRISE

INTERIOR VIEWS

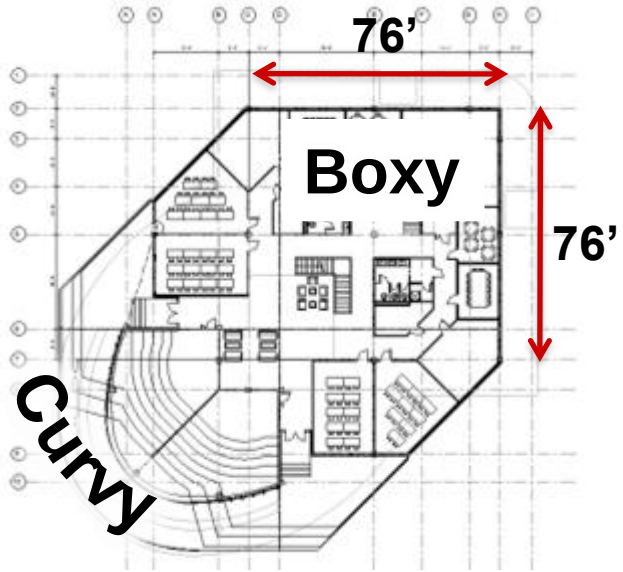


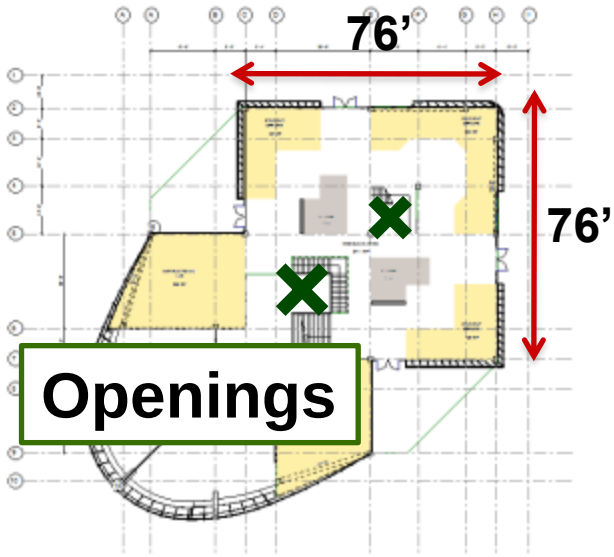
TERMITE ENTERPRISE

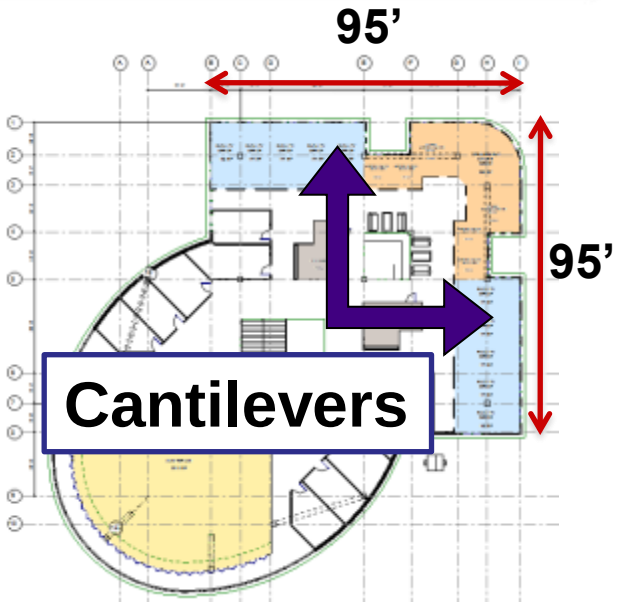
INTERIOR VIEWS

TERMITE ENTERPRISE

INTERIOR VIEWS



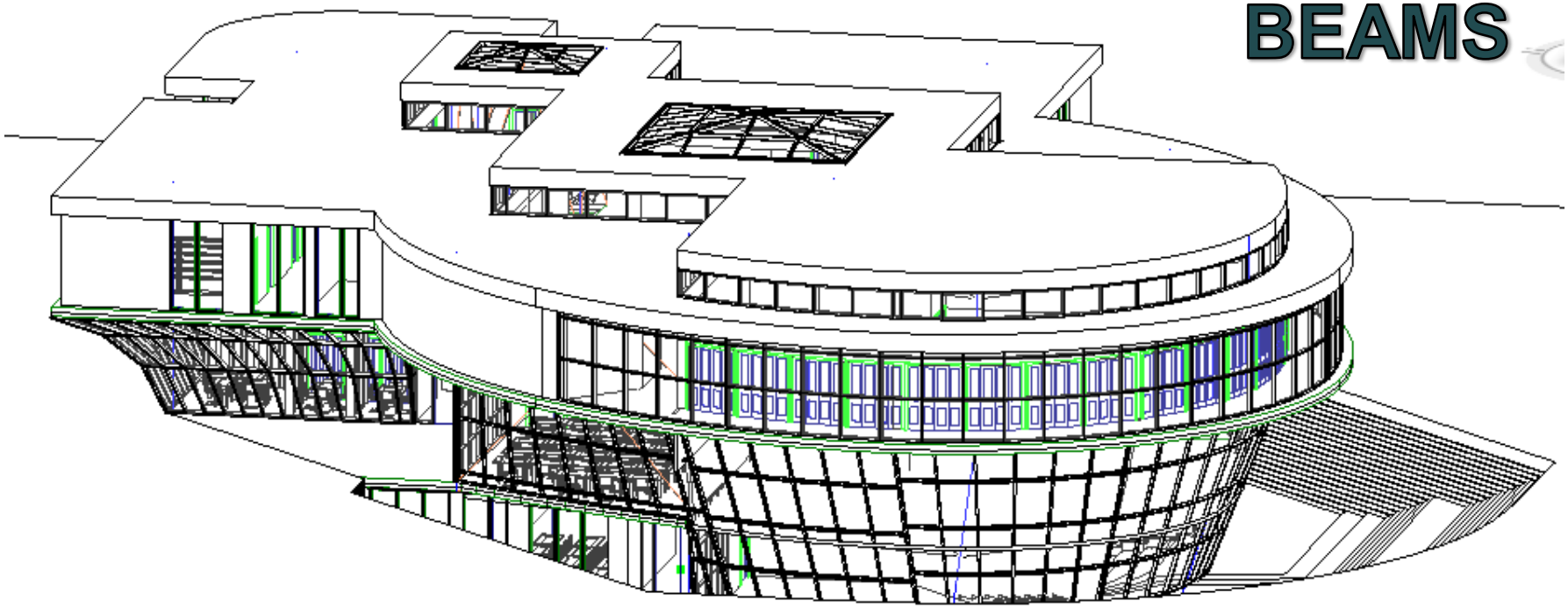


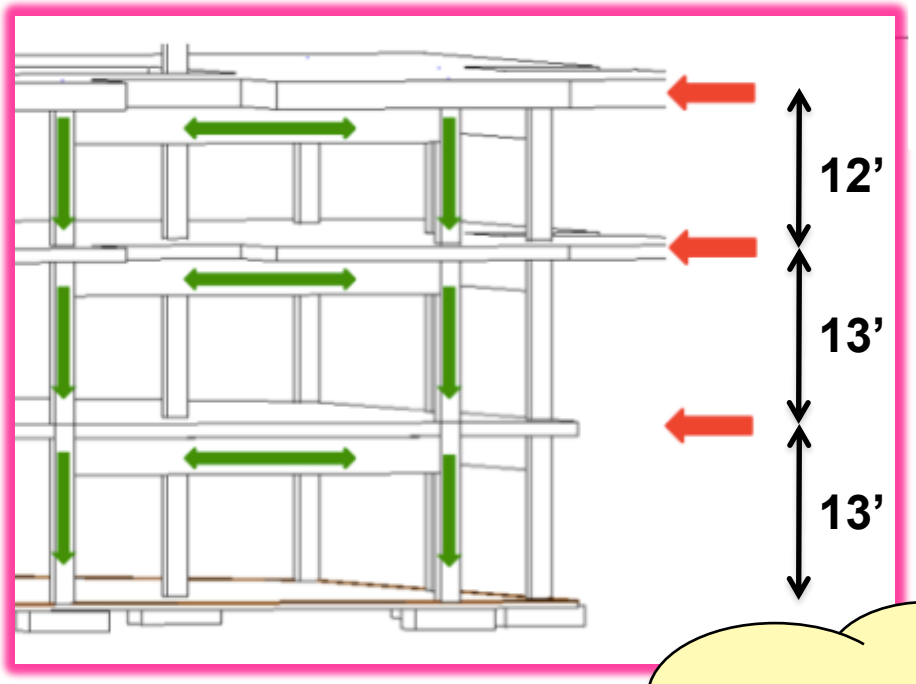


UNDERGROUND ***GROUND FLOOR*** ***FIRST FLOOR***

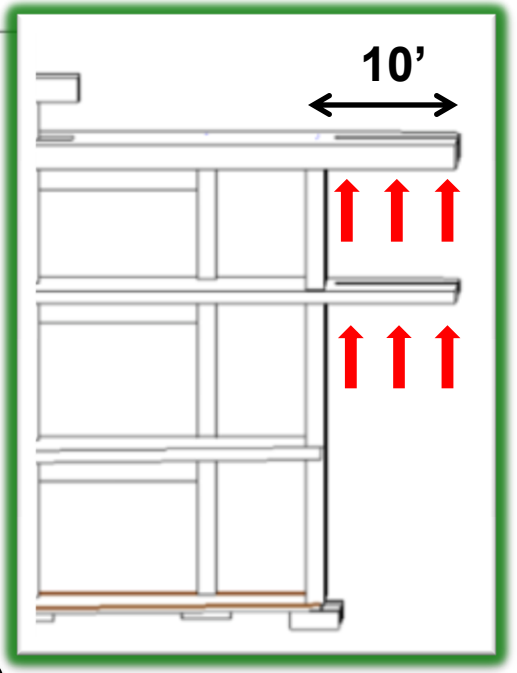
- Different shapes and dimensions between floors
- Boxy + Curvy design
- Large Openings
- Floor-to-floor height limitations
- First Floor cantilevers
- Organic structure – irregular bays

Structural Alternatives: POST-TENSIONED CONCRETE *and* CELLULAR BEAMS



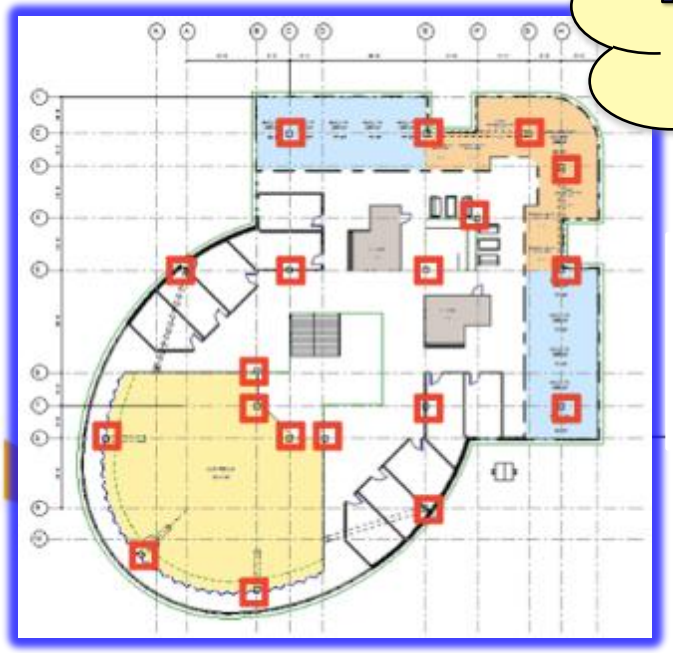


LFRS: Concrete Moment Frames



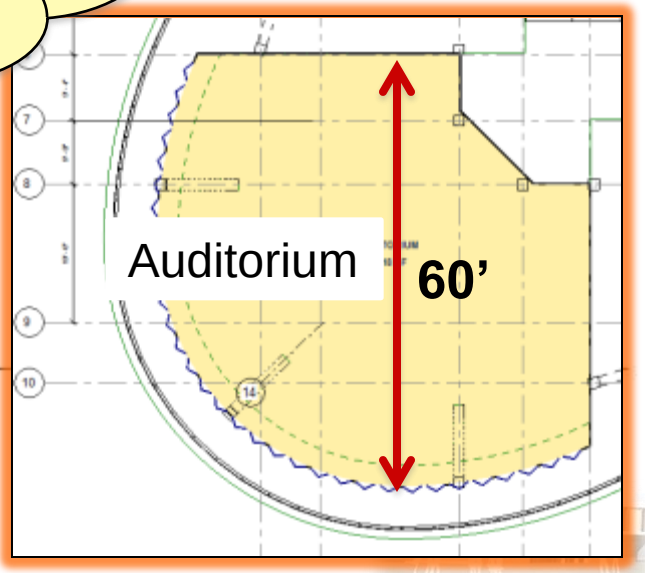
Tendons alleviate cantilevers

POST-TENSIONED CONCRETE

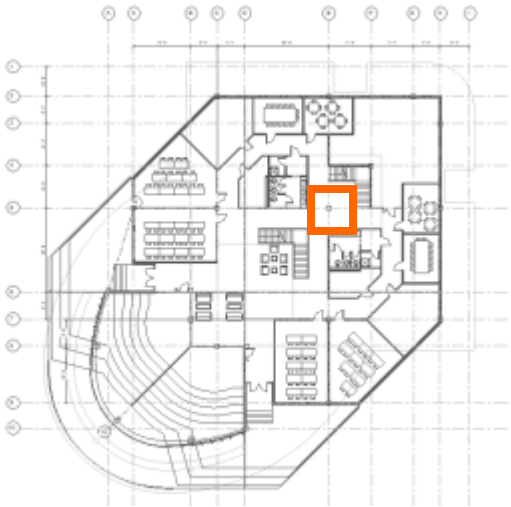


No beams + less columns = architectural freedom

Longer spans with thinner slab



POST-TENSIONED CONCRETE



UNDERGROUND

GROUND FLOOR

FIRST FLOOR

Two-way slab with drop panels

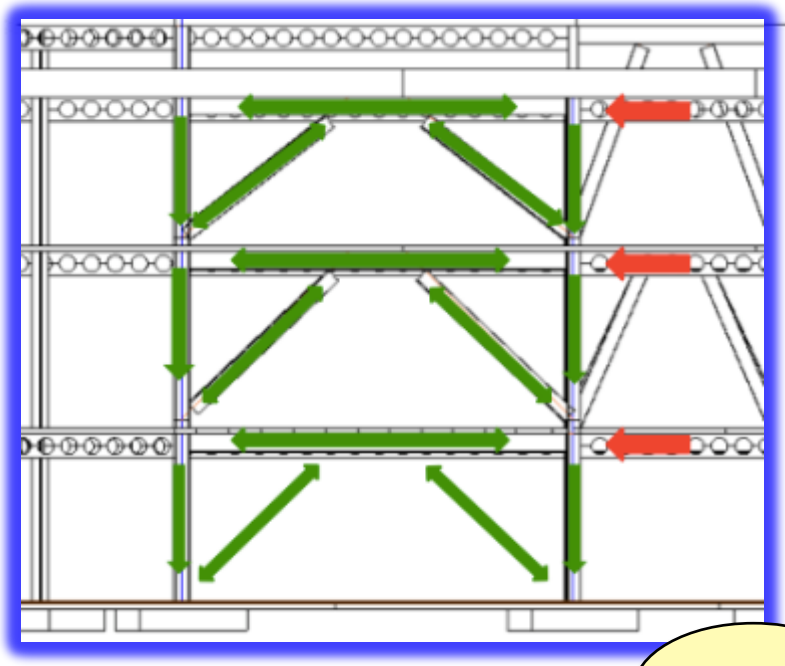
Un-bonded tendons

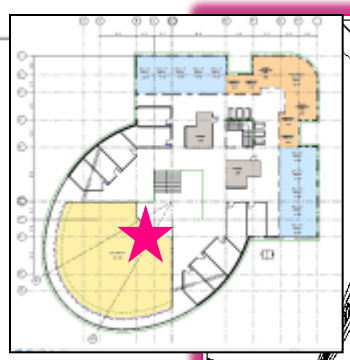
Slab thickness: **12”**

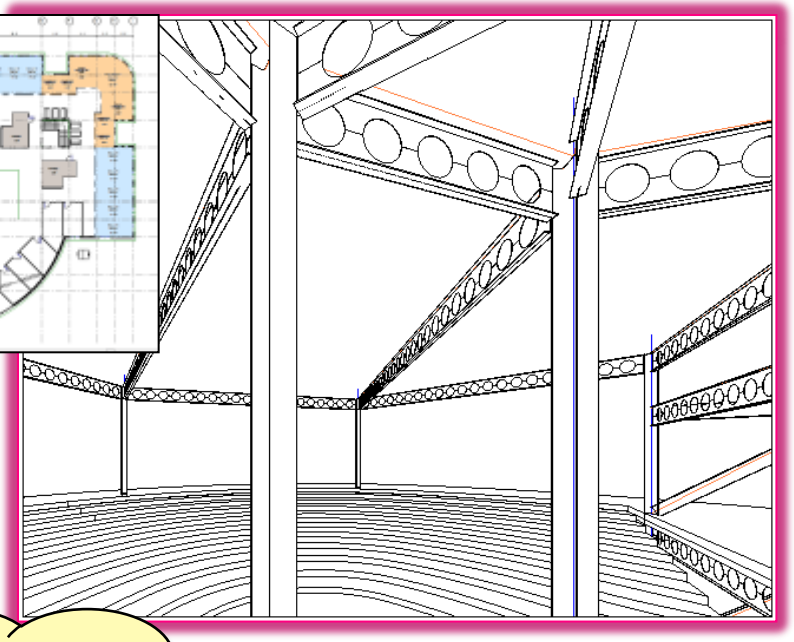
Square Footings: **12’ x 12’, 3.5’ deep**

Worst Columns:

- Underground: **20” x 20”**
- Ground Floor: **17” x 17”**
- First Floor: **9” x 9”**



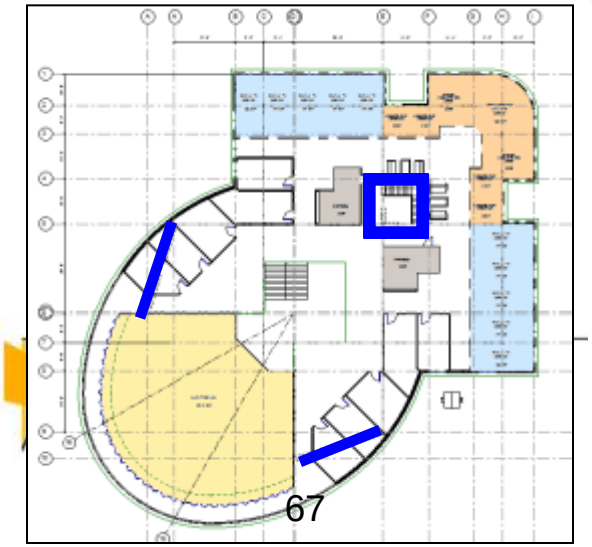




LFRS: Eccentrically Braced Frames

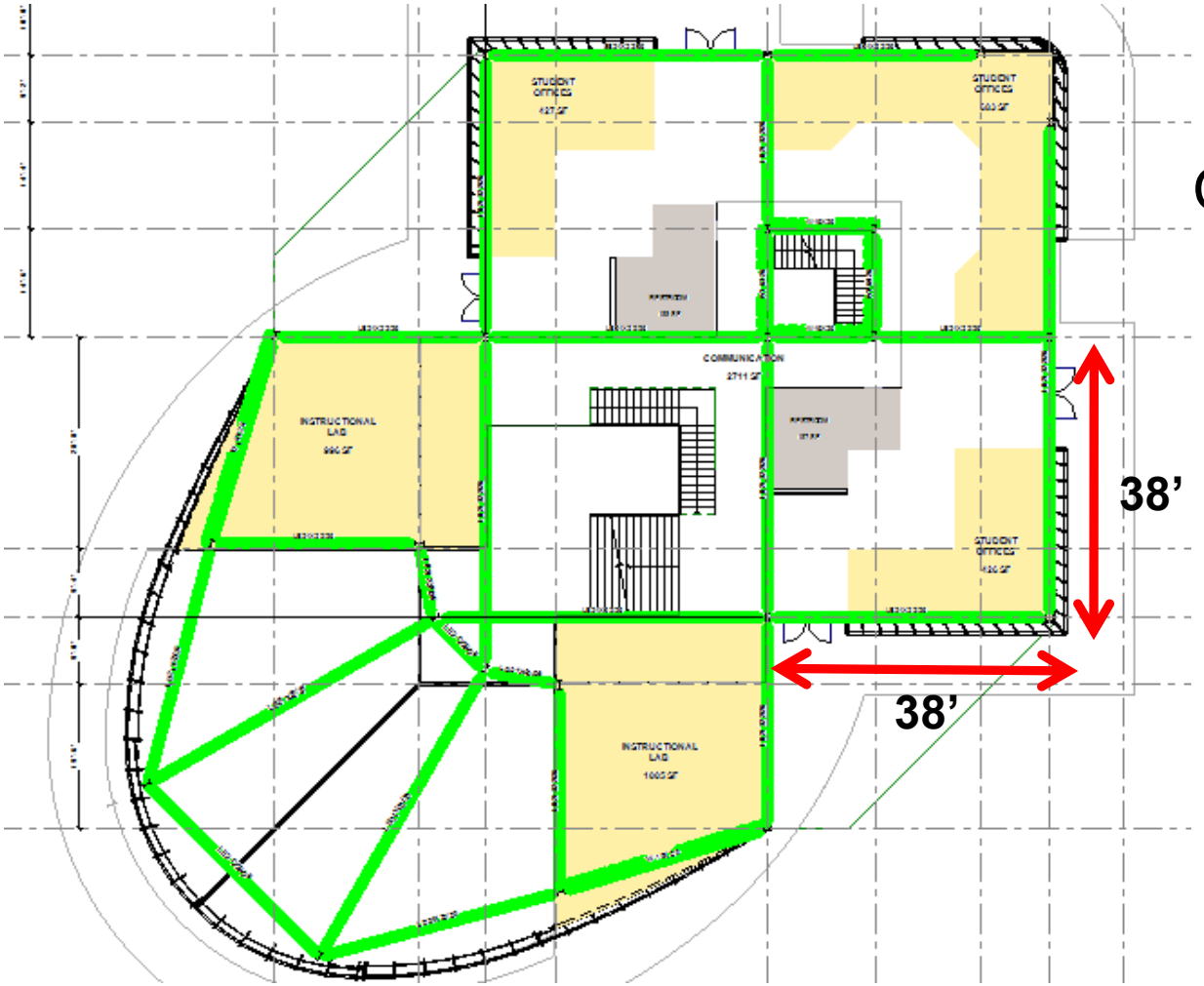
CELLULAR BEAMS

Biomimicry inspiration



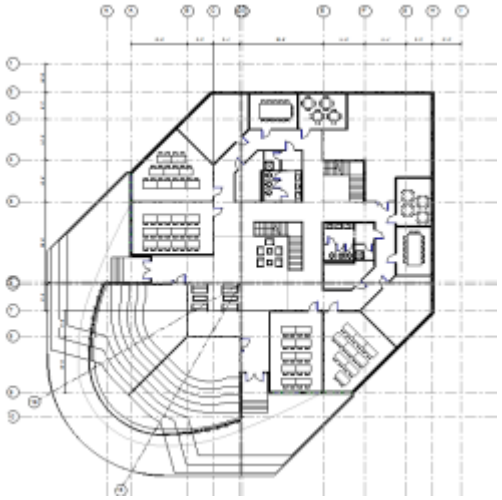
Good MEP integration

Orthogonal Grid



Radial Grid

CELLULAR BEAMS



UNDERGROUND

GROUND FLOOR

FIRST FLOOR

Typ. Floor Beam: **LB 27x35/40**

Typ. Roof Beam: **LB 18x16/30**

Floor Girder: **LB 45x108/116**

Auditorium Girder: **LB 45x90**

Roof Girder: **LB 36x68**

Worst Column: **W14x61**

Square Footings: **12.5’ x 12.5’ 4.5’ deep**

POST-TENSIONED CONCRETE

DEAD	Roof	**75**	psf
	Floor	**200**	psf
LIVE	Roof	**20**	psf
	Floor	**100**	psf
SEISMIC	Base Shear	**986**	kip
	Roof	**726**	kip
	1st Floor	**260**	kip

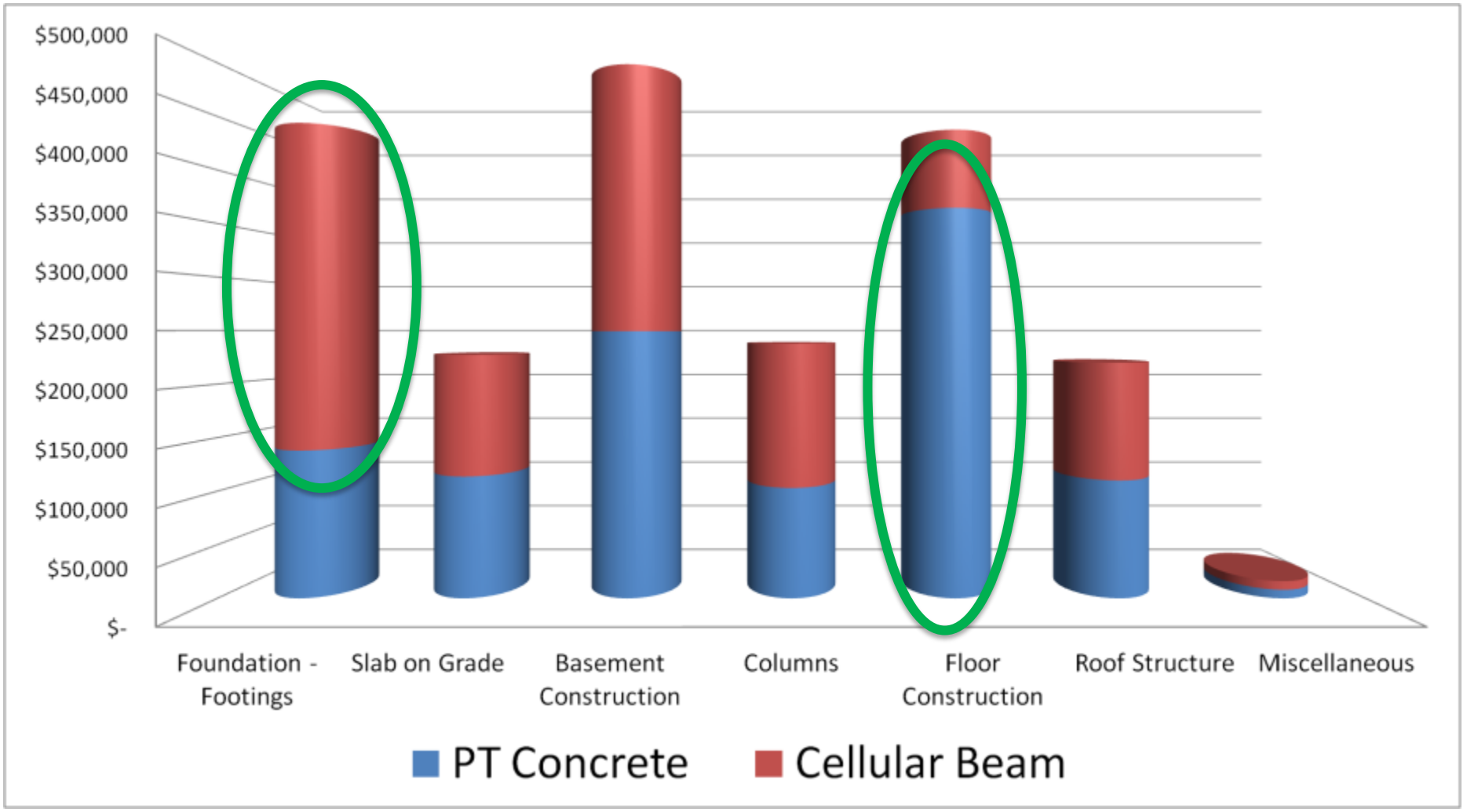
VS.

CELLULAR BEAMS

DEAD	Roof	**75**	psf
	Floor	**100**	psf
LIVE	Roof	**20**	psf
	Floor	**100**	psf
SEISMIC	Base Shear	**195**	kip
	Roof	**144**	kip
	1st Floor	**51**	kip

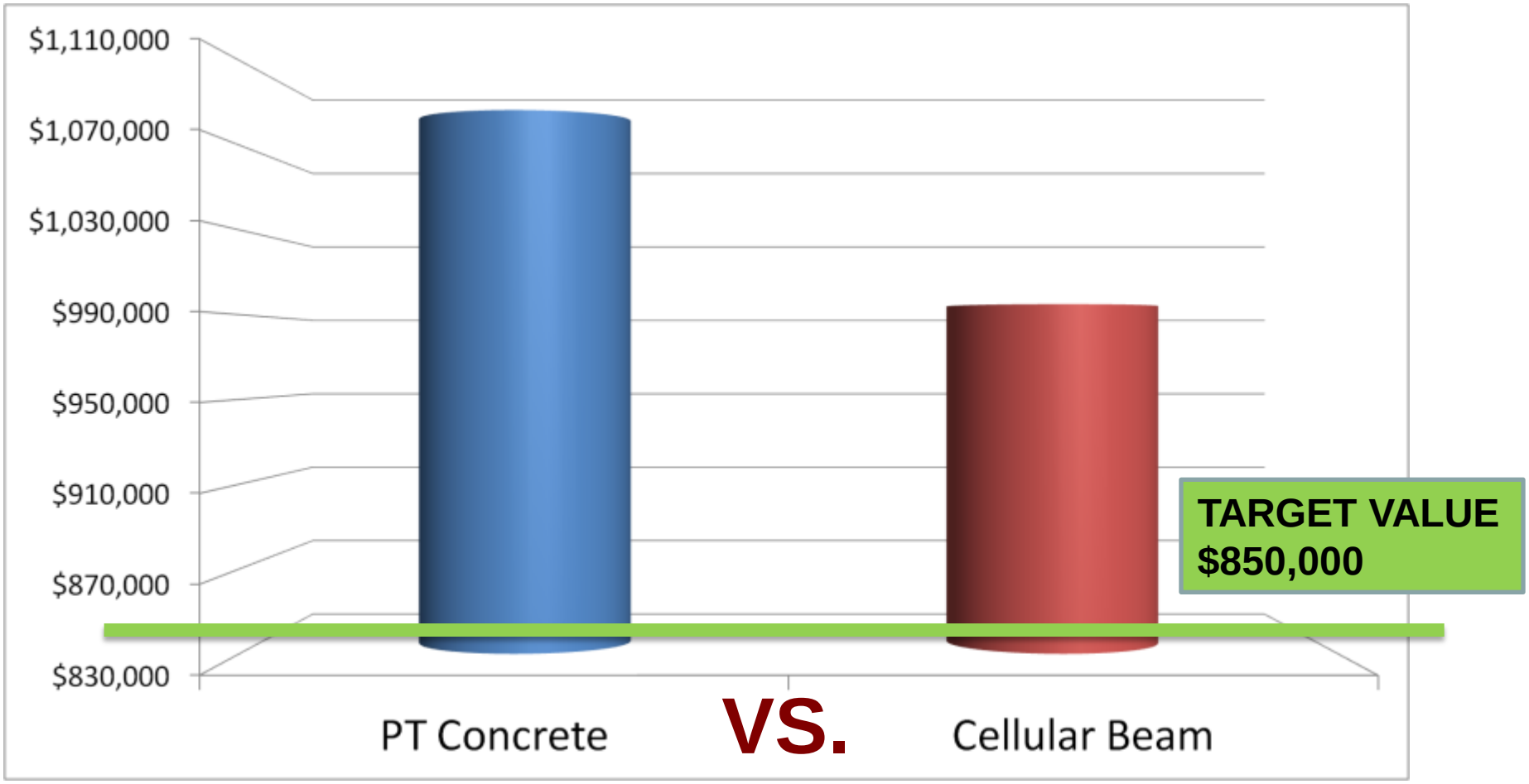
TERMITE ENTERPRISE

LOADING CRITERIA



TERMITE ENTERPRISE

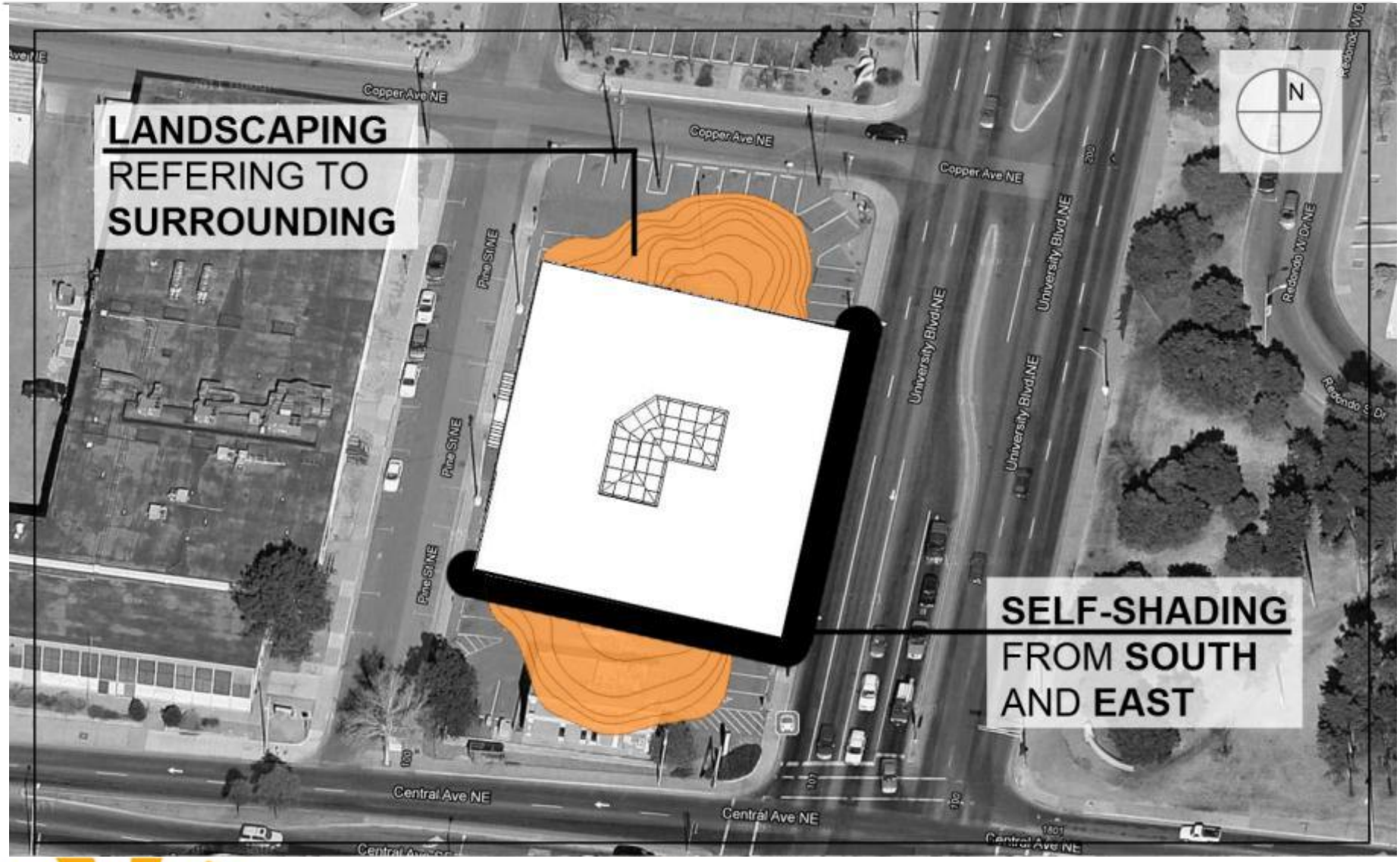
STRUCTURAL COST BREAKDOWN



TERMITE ENTERPRISE

STRUCTURAL COSTS

INVERTED MOUND



INVERTED MOUND

BUILDING ORIENTATION

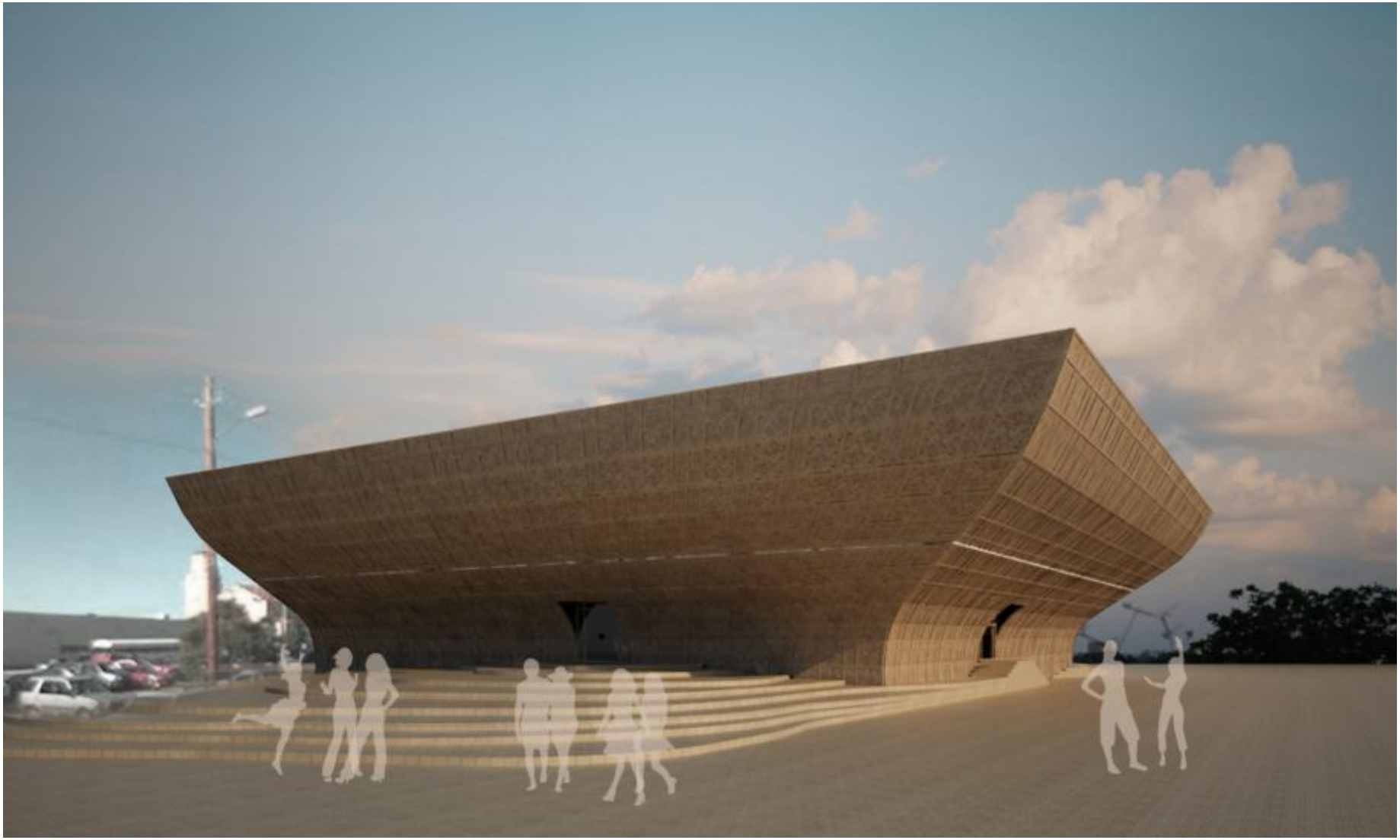
SUMMARY

EDUCATION SPACES	11 516 SqFt
FACULTY SPACES	3 610 SqFt
ADMINISTRATION	957 SqFt
TECHNICAL AND STORAGE	2 100 SqFt
SANITARY	882 SqFt
COMMUNICATION AND LOUNGES	11 600 SqFt
OVERALL	**30 665 SqFt**

REVISED FOR
FUNCTIONAL REASONS

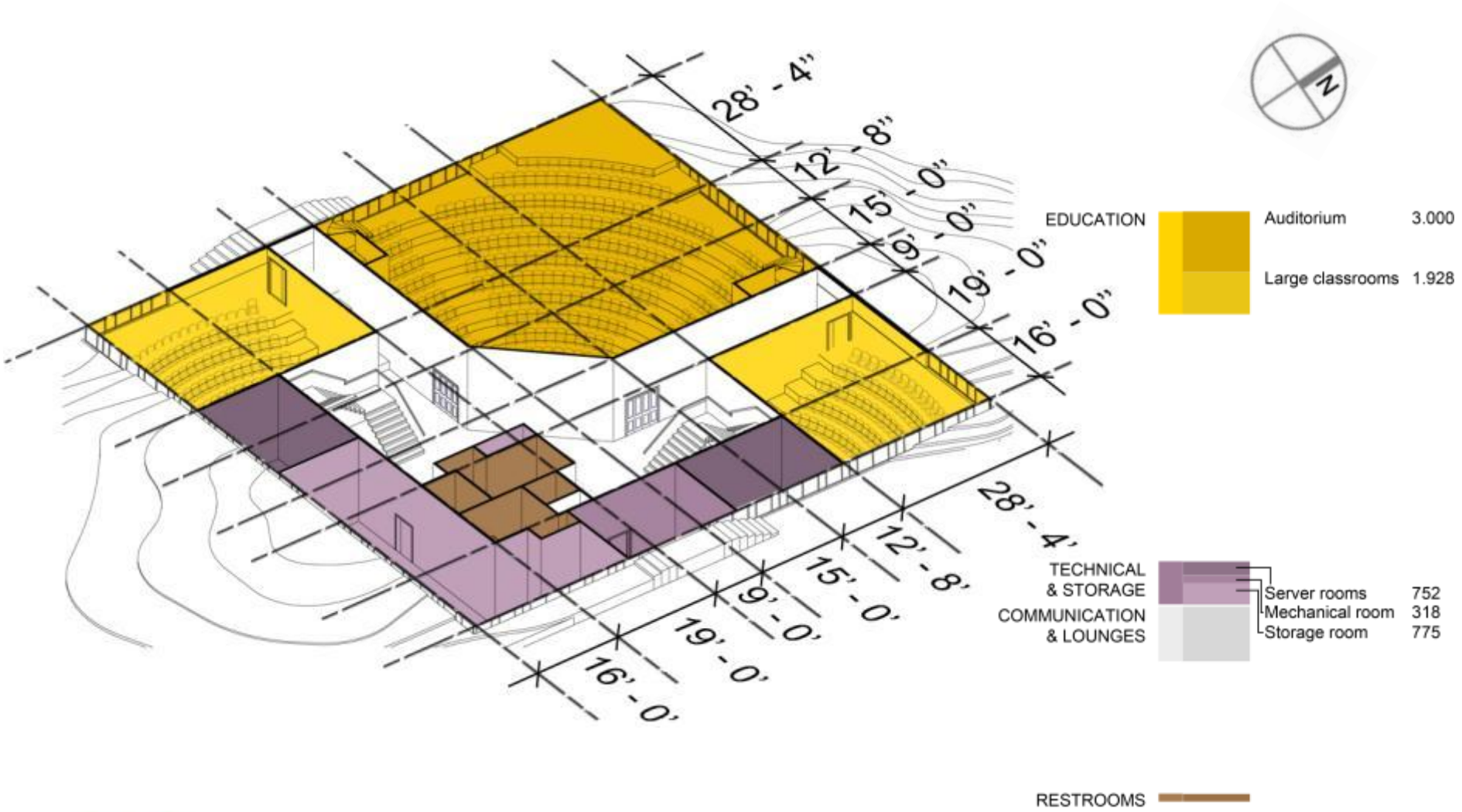
FORM EVOLUTION

VERSION 01



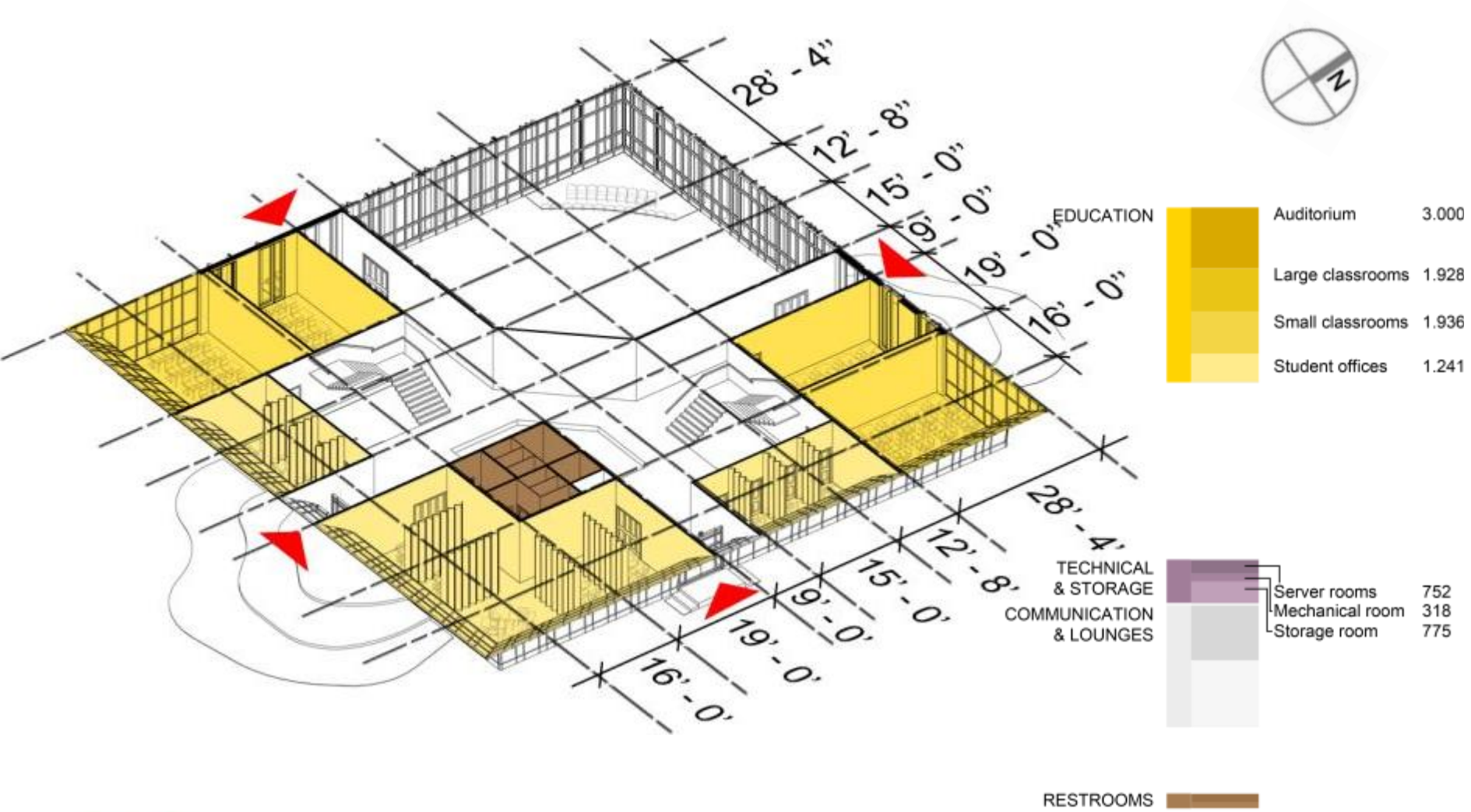
FORM EVOLUTION

VERSION 02



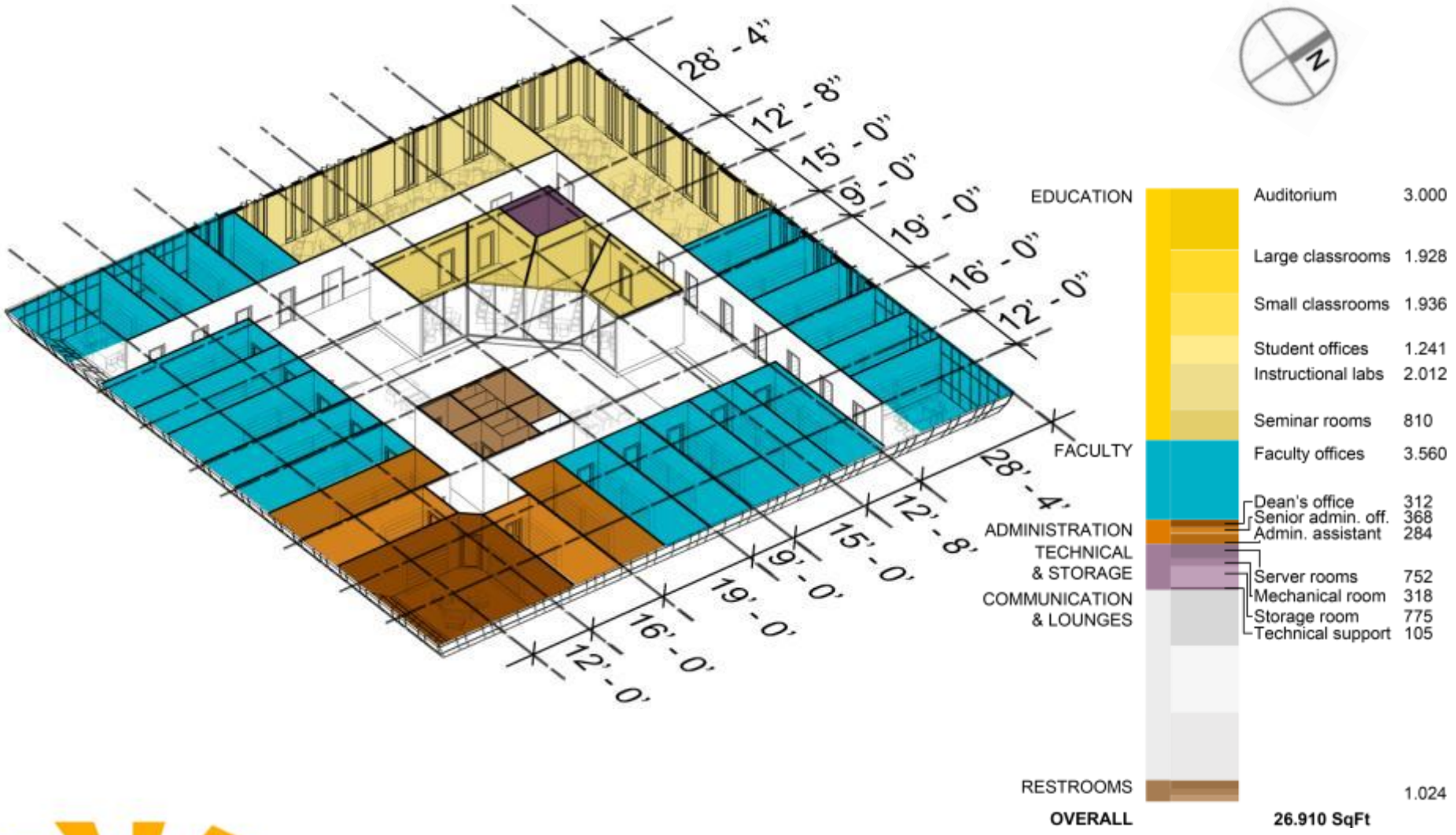
FUNCTIONAL ORGANIZATION

UNDERGROUND



FUNCTIONAL ORGANIZATION

GROUNDFLOOR



FUNCTIONAL ORGANIZATION

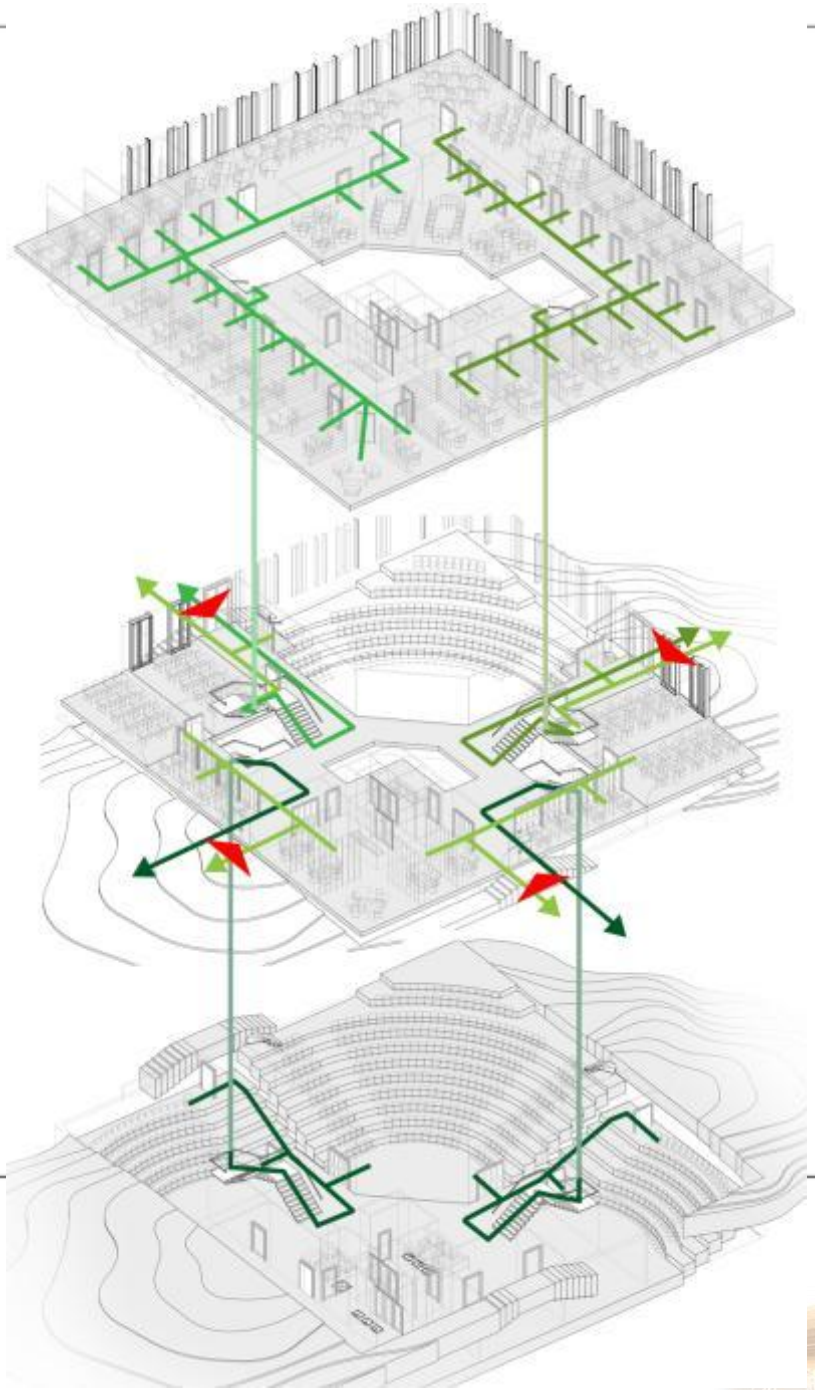
FIRST FLOOR

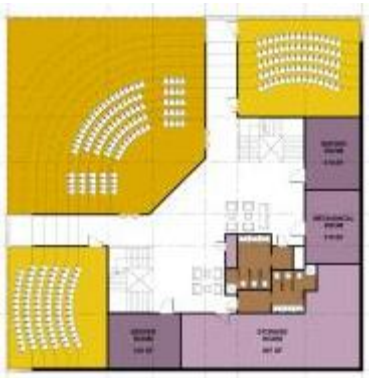
EGRESS SCHEME

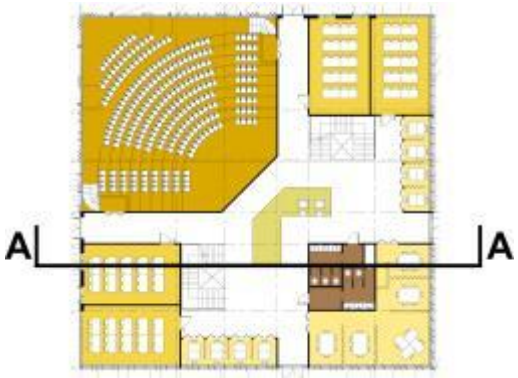
FIRST FLOOR

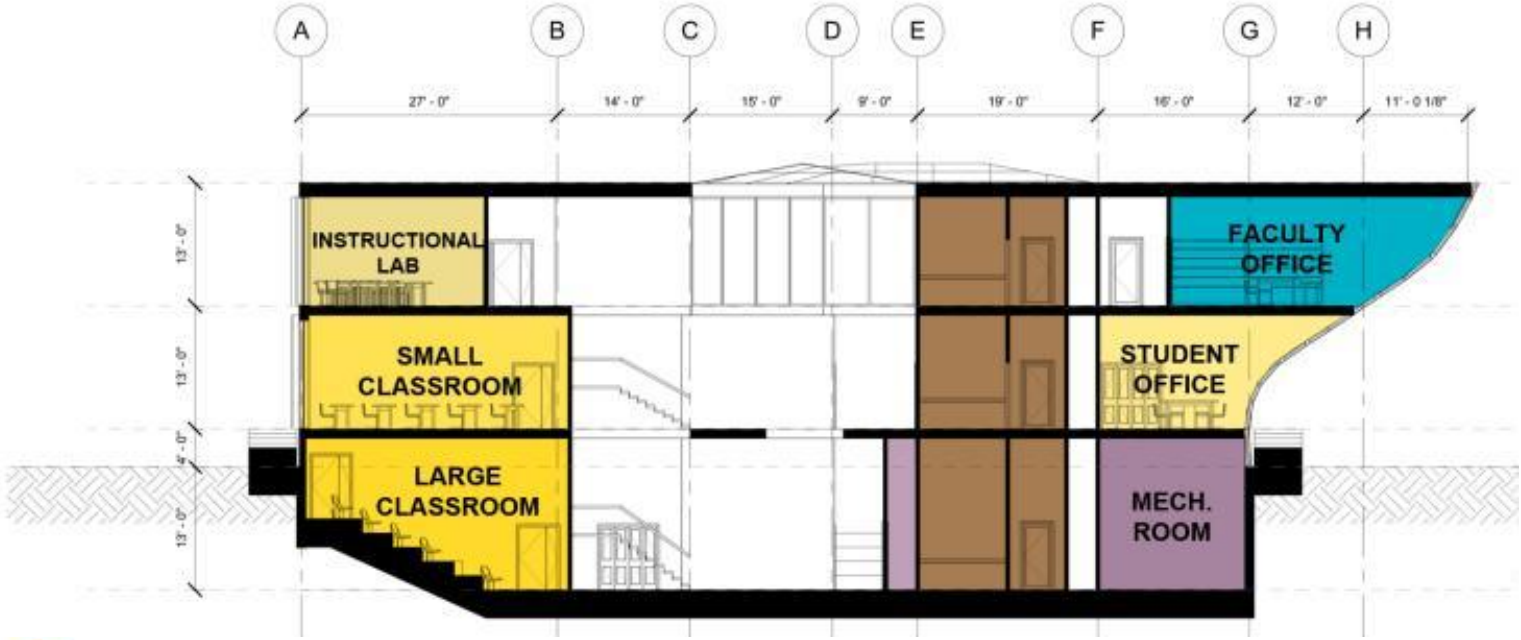
GROUNDFLOOR

UNDERGROUND



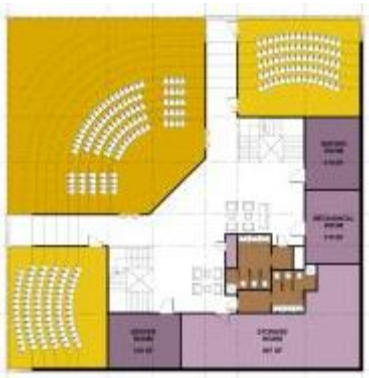


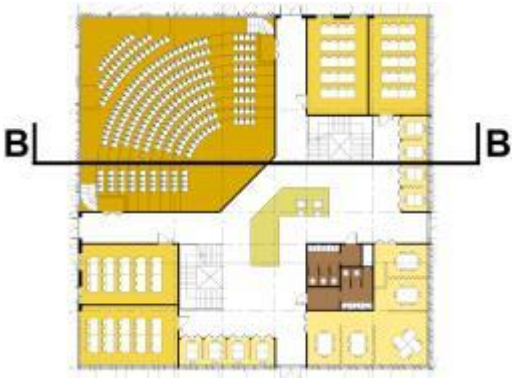


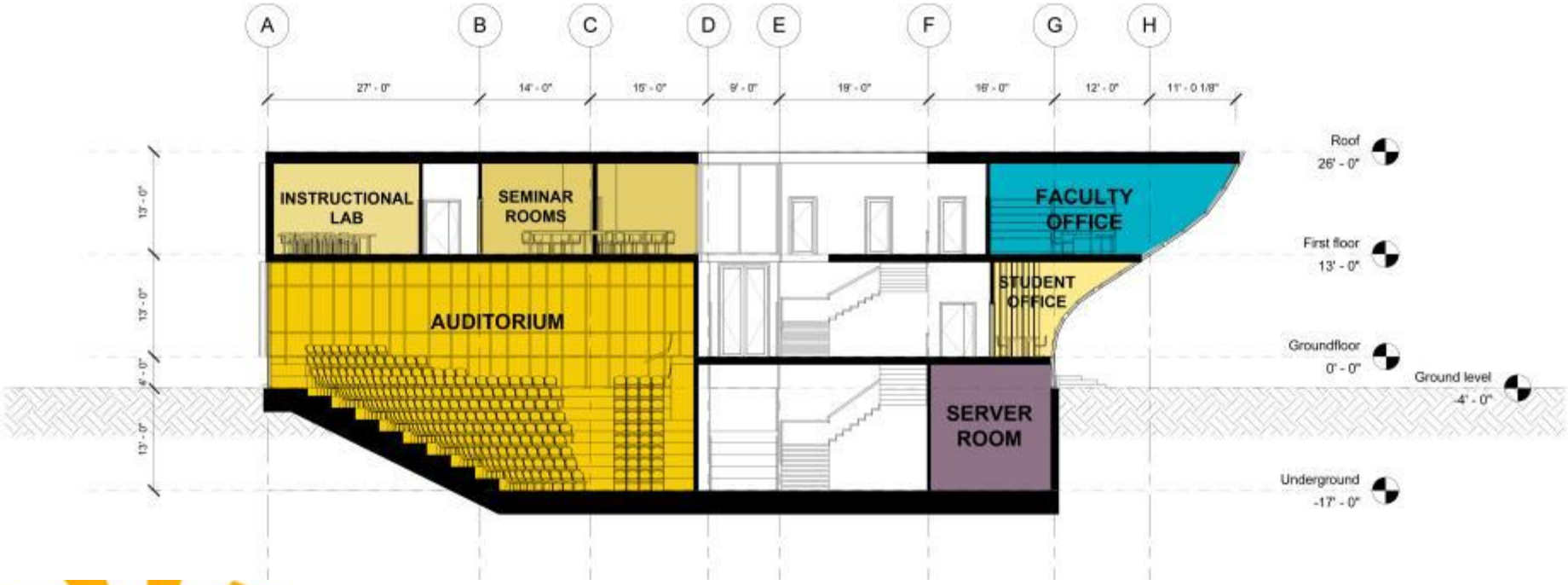


SECTIONS

SECTION A-A

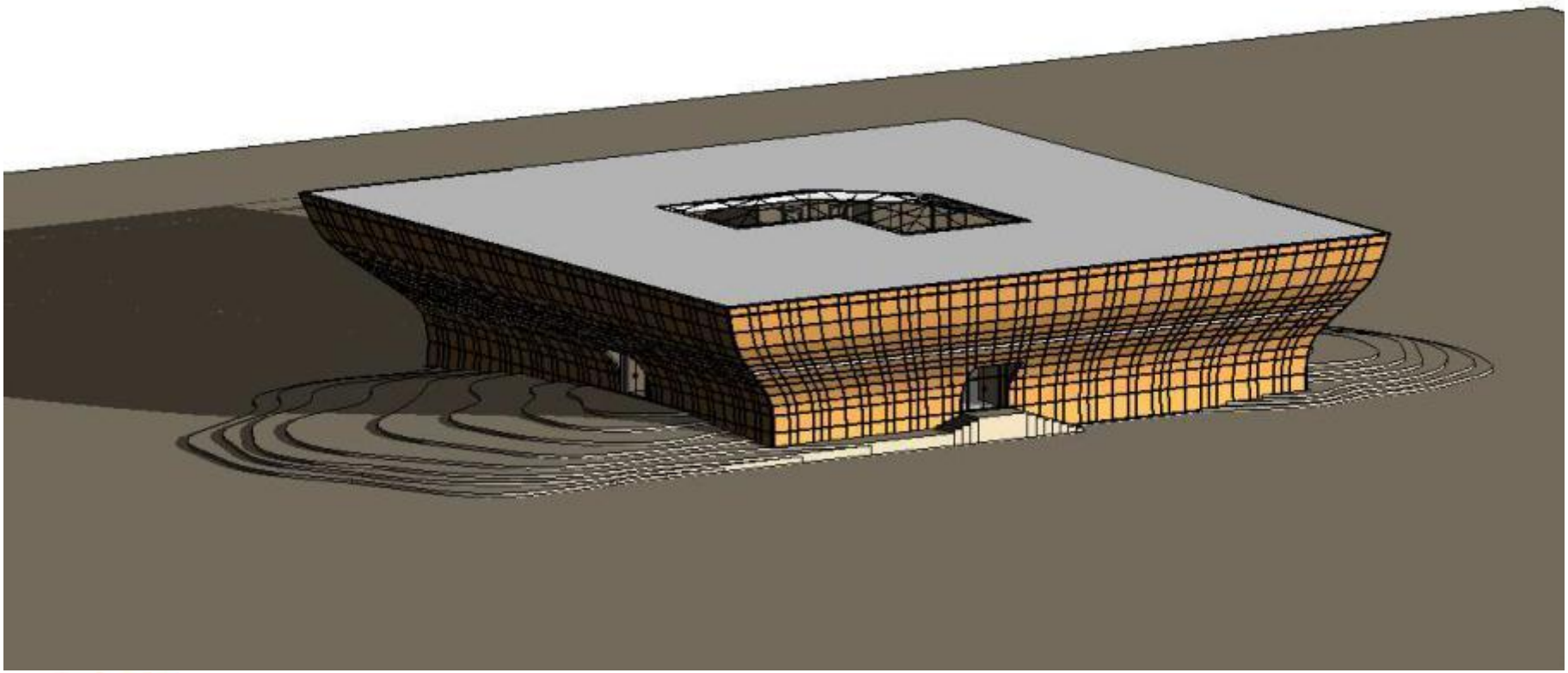






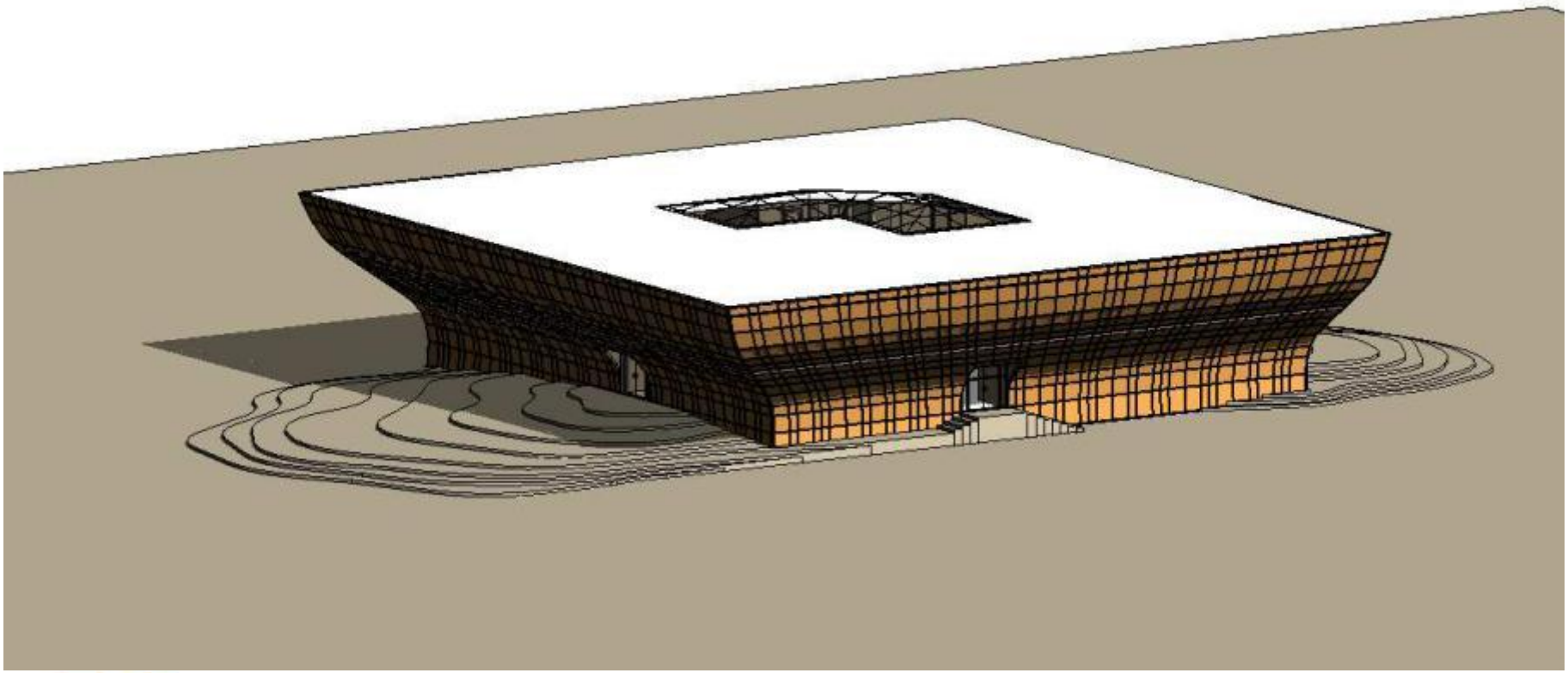
SECTIONS

SECTION B-B



SUN ANALYSIS

06:00 AM



SUN ANALYSIS

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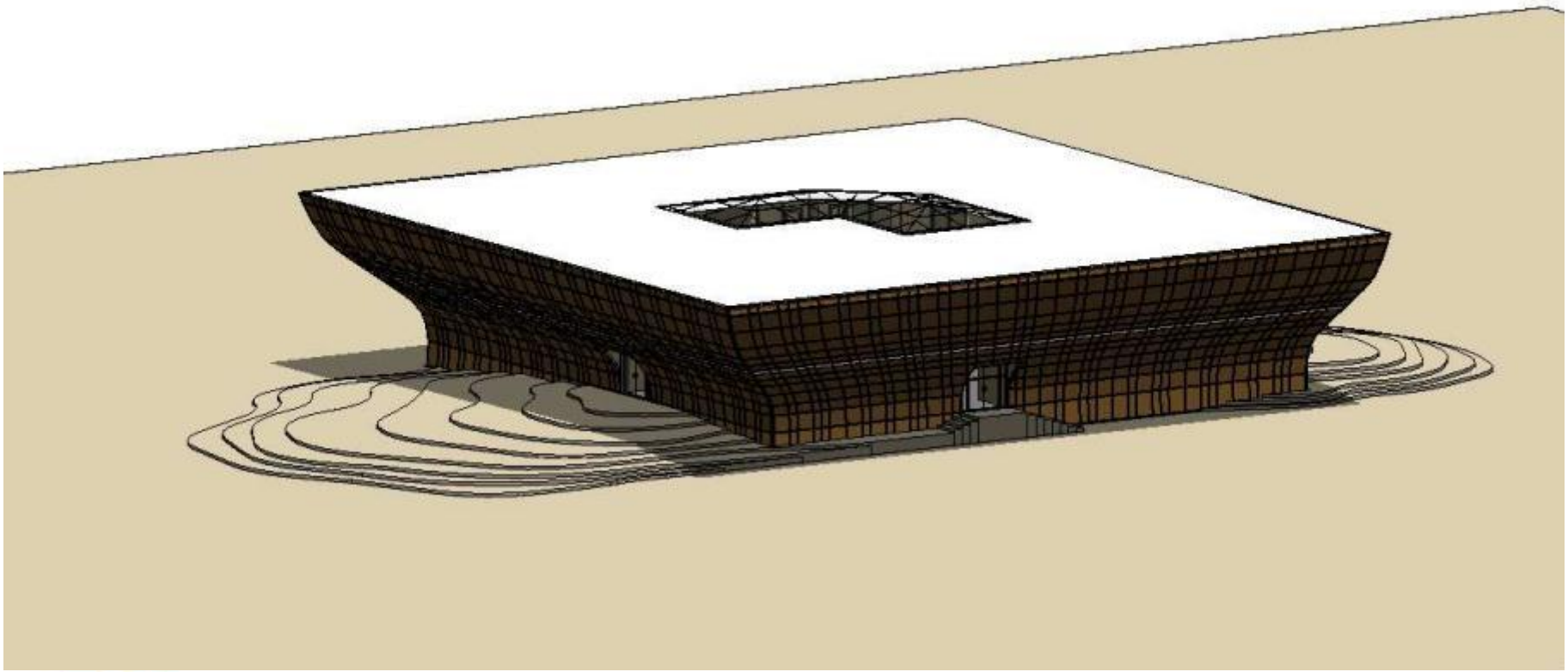

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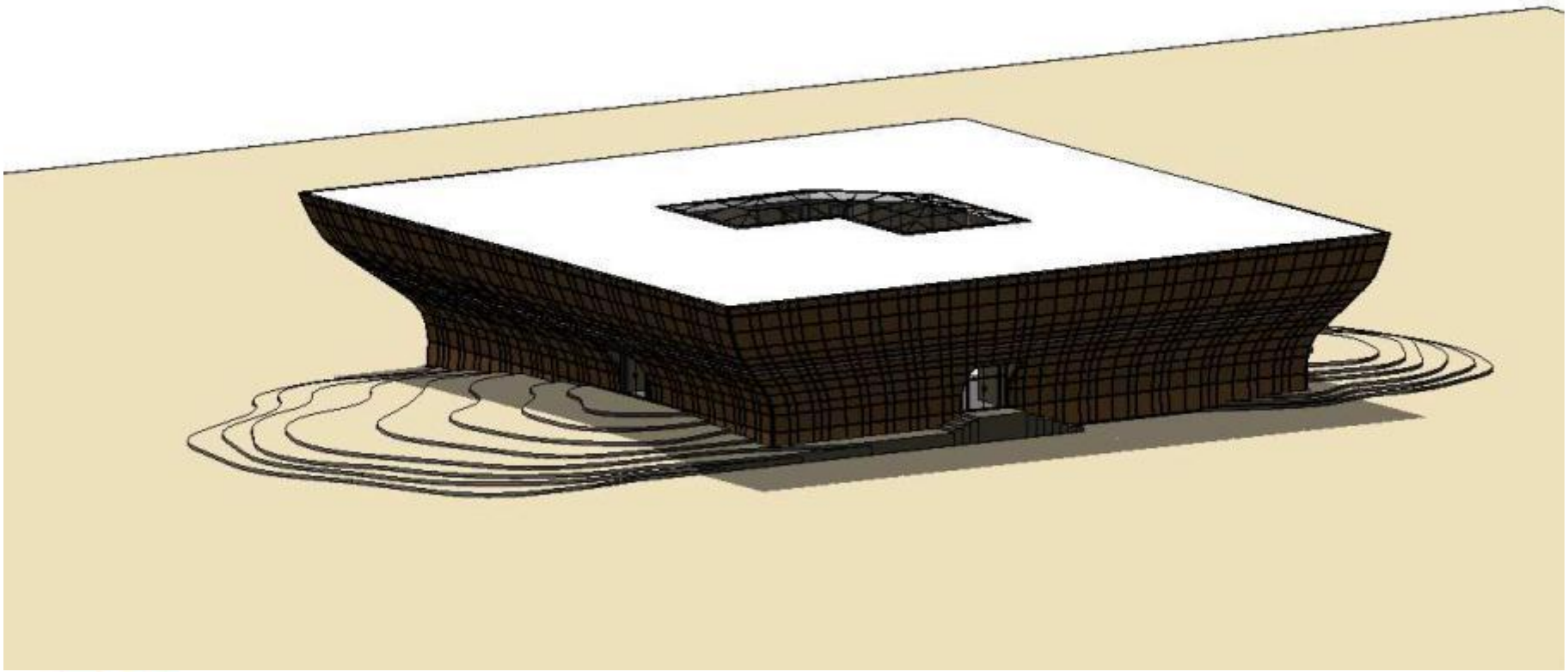

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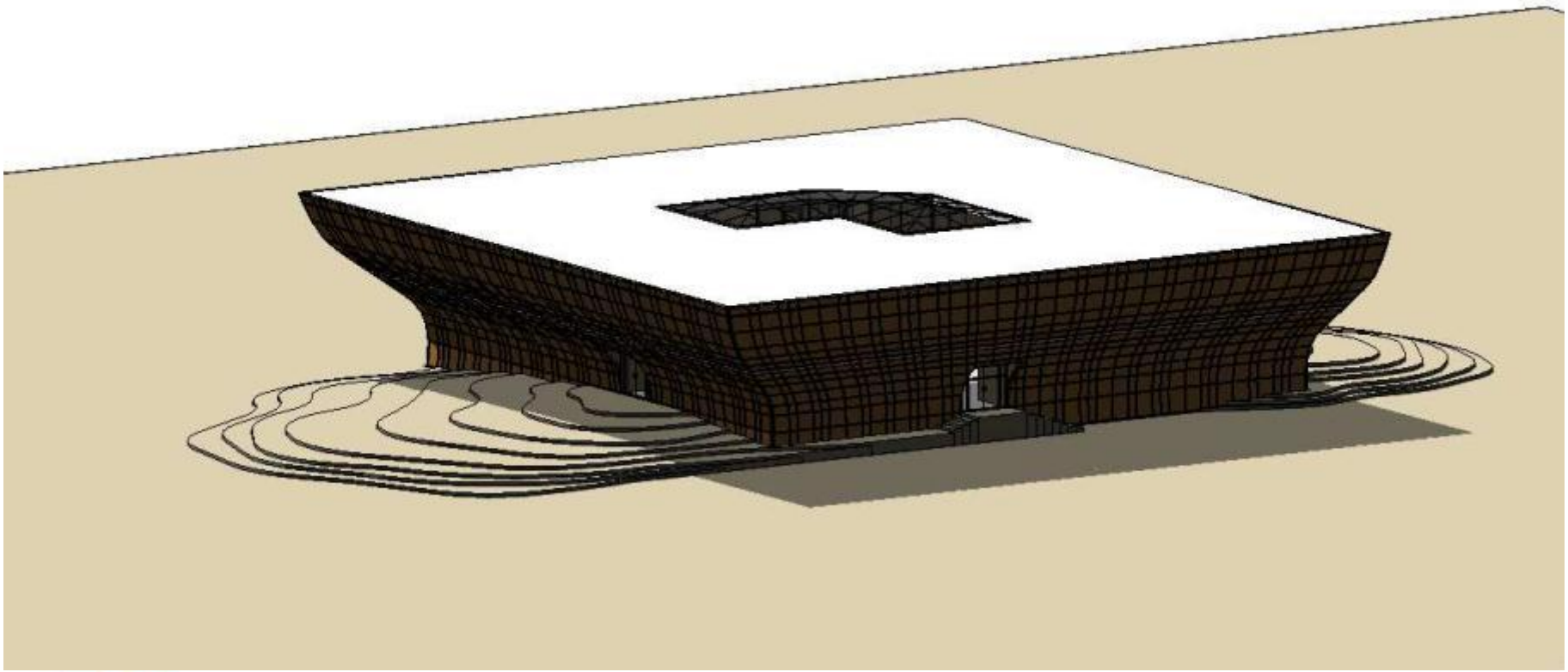
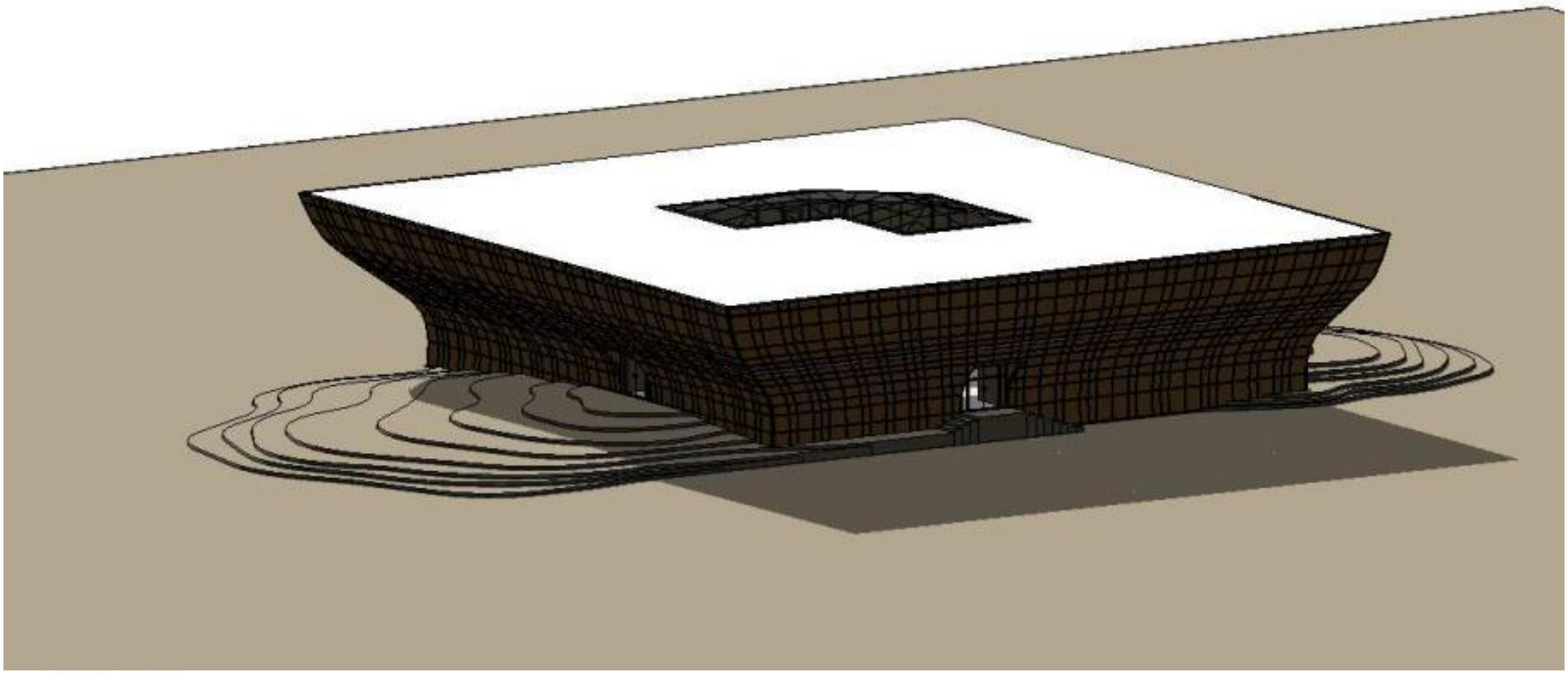


SUN ANALYSIS

02:00 PM



SUN ANALYSIS

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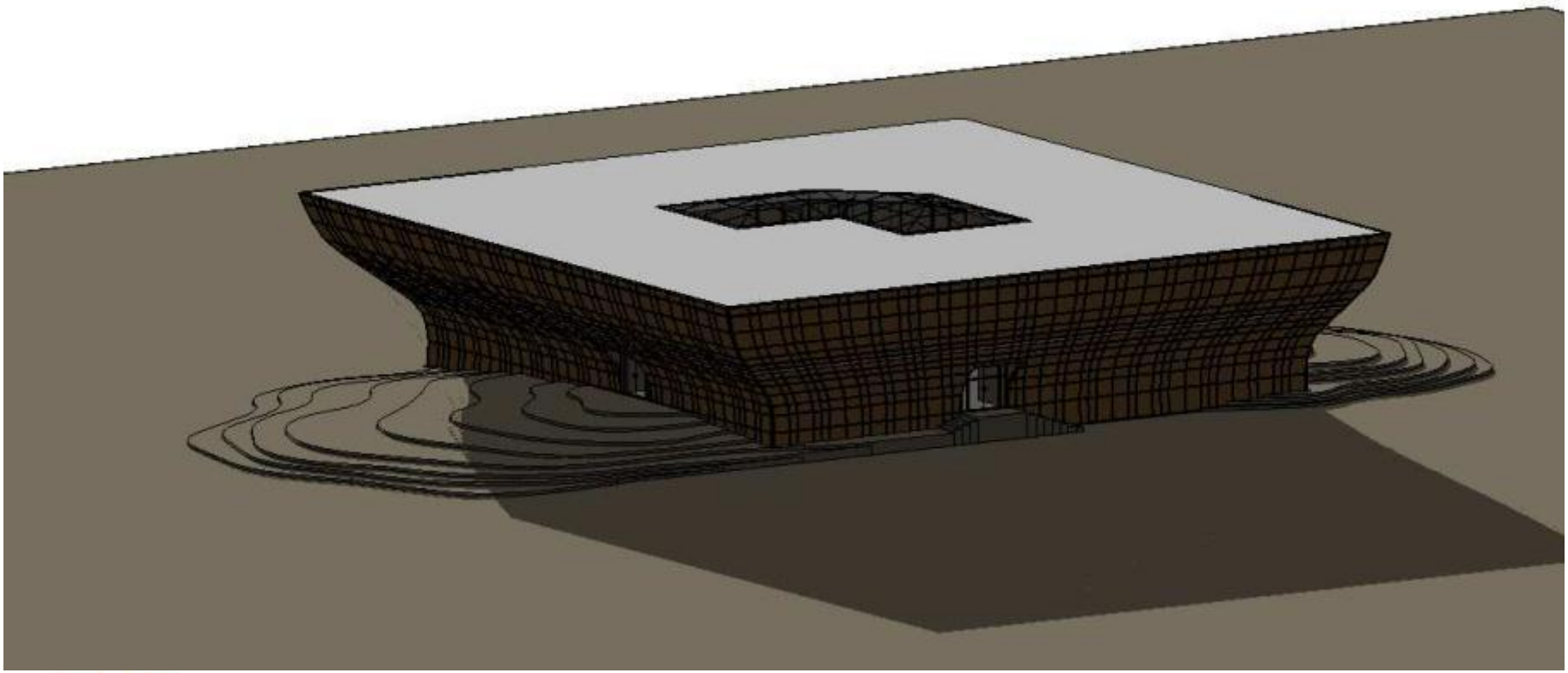

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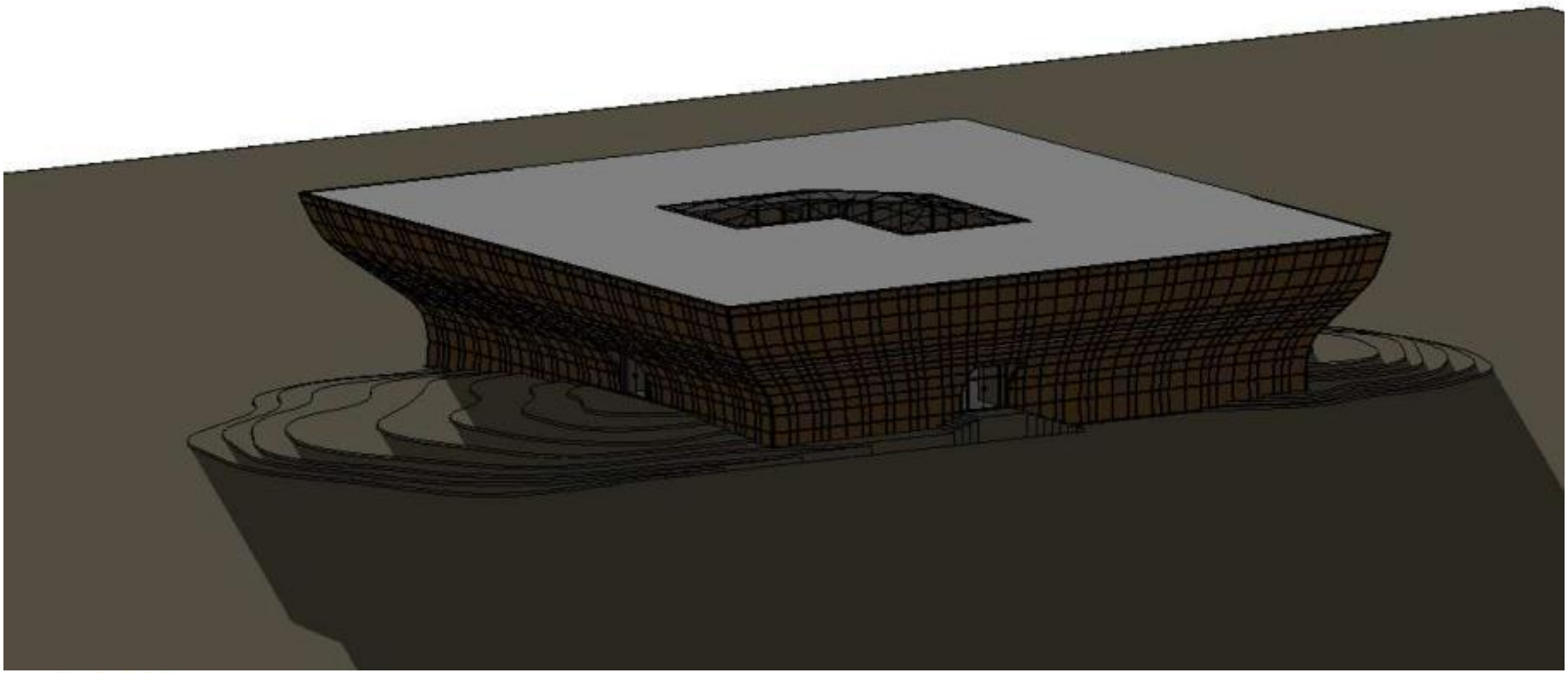
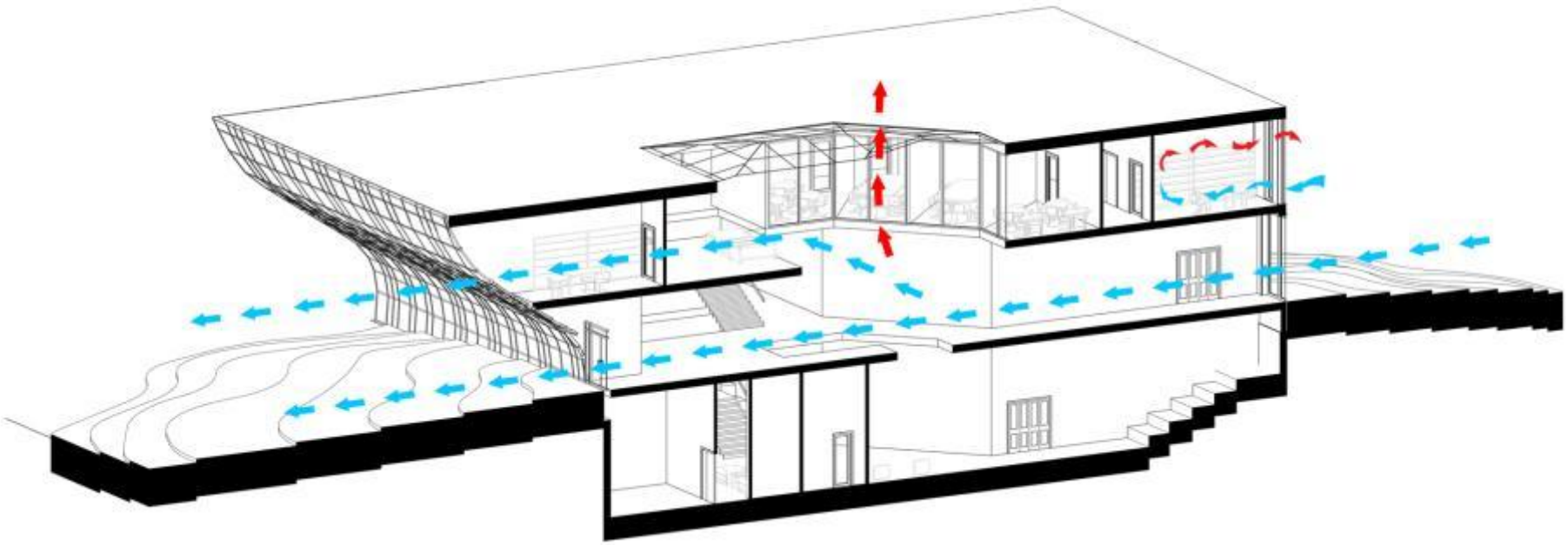


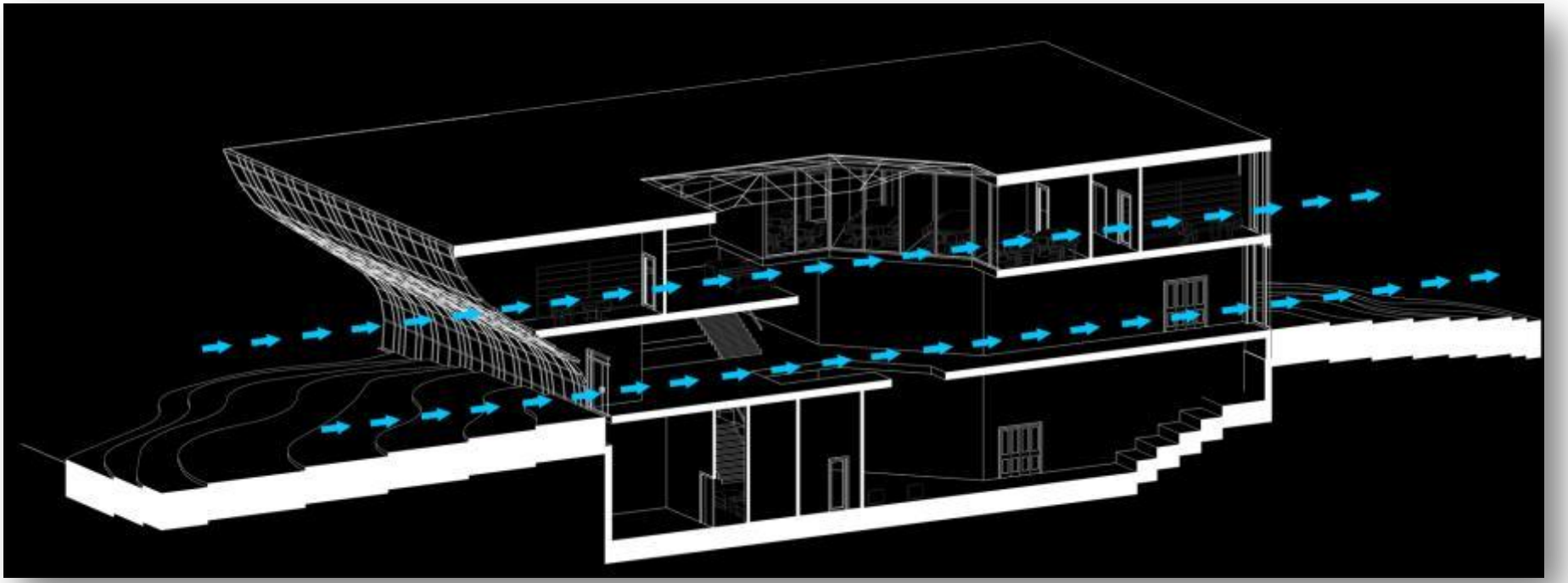
SUN ANALYSIS

08:00 PM

- SINGLE SIDED VENTILATION ON PERIMETER
- CROSS VENTILATION THROUGH OPEN SPACES

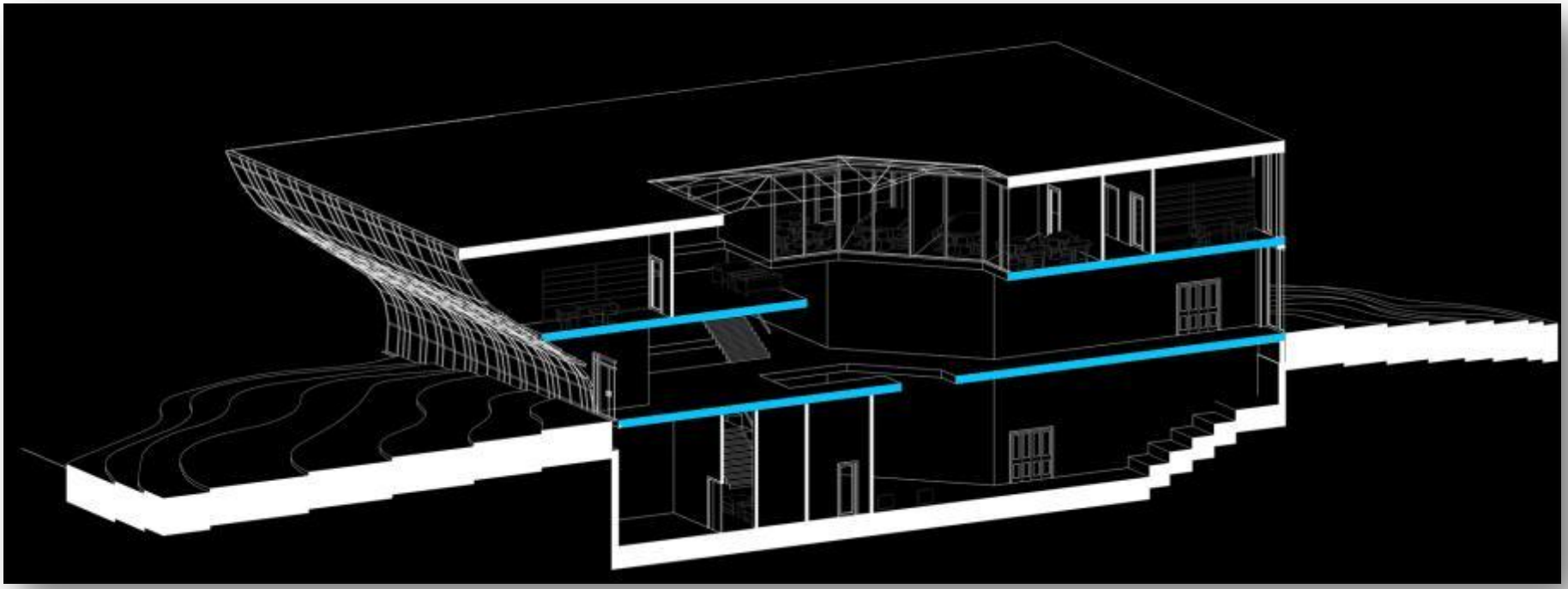


NATURAL VENTILATION



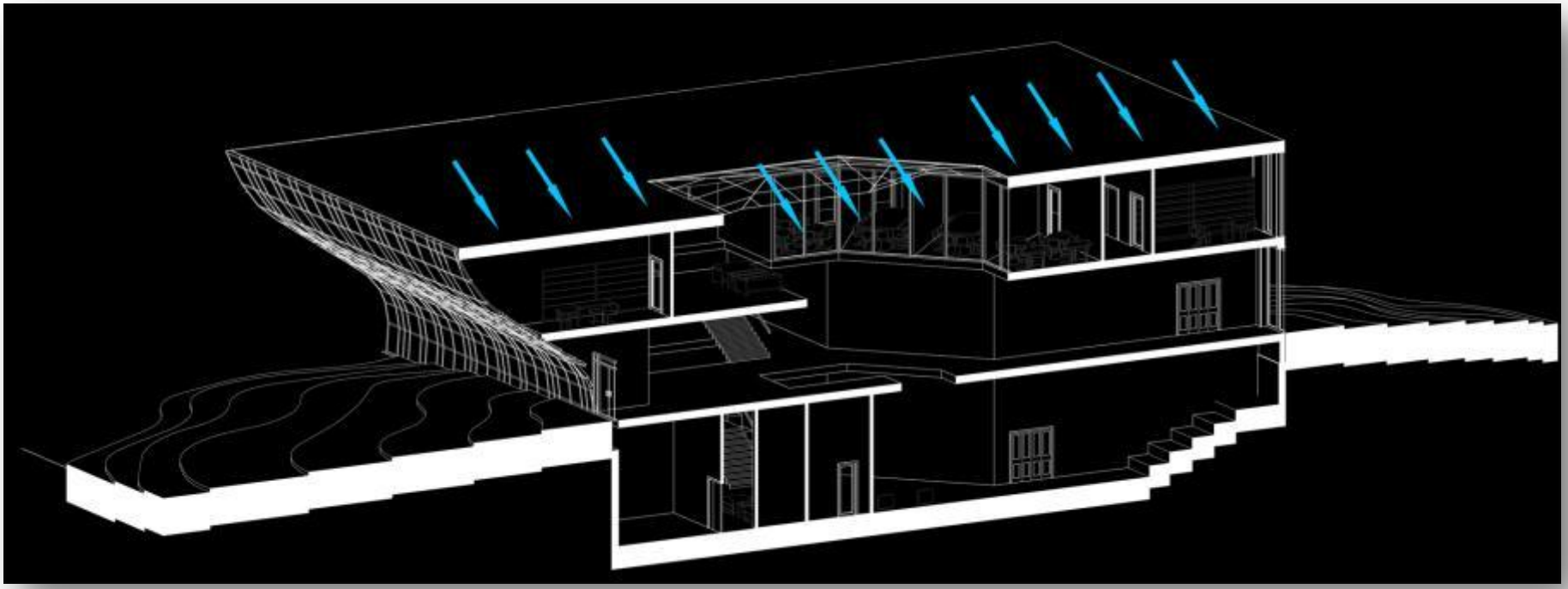
NATURAL VENTILATION

NIGHT COOLING



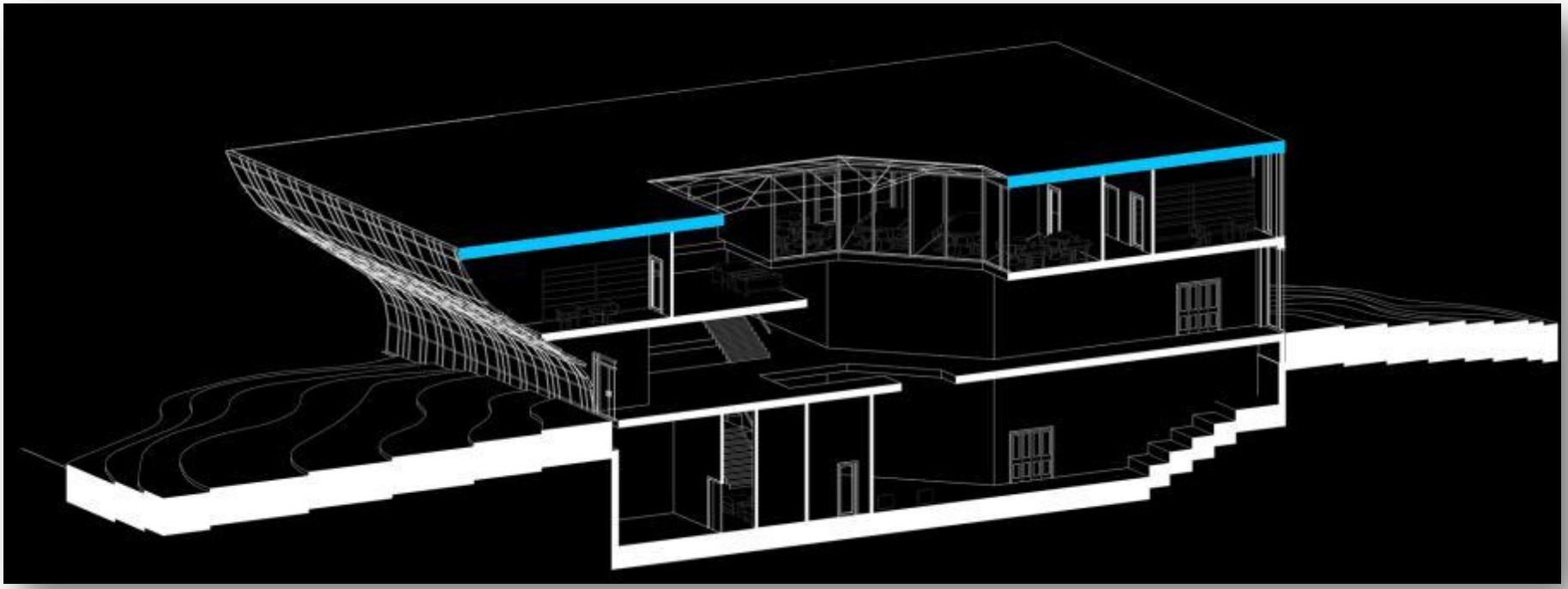
NATURAL VENTILATION

NIGHT COOLING



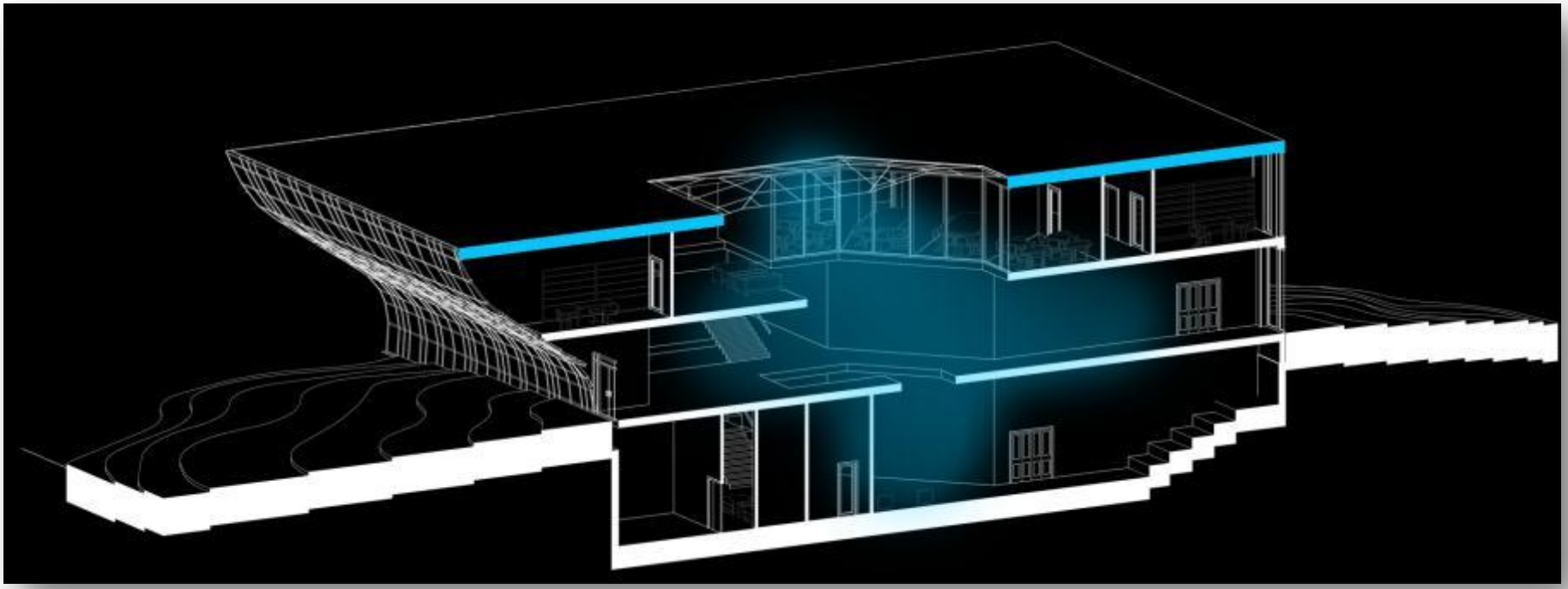
NATURAL VENTILATION

NIGHT COOLING



NATURAL VENTILATION

NIGHT COOLING



NATURAL VENTILATION

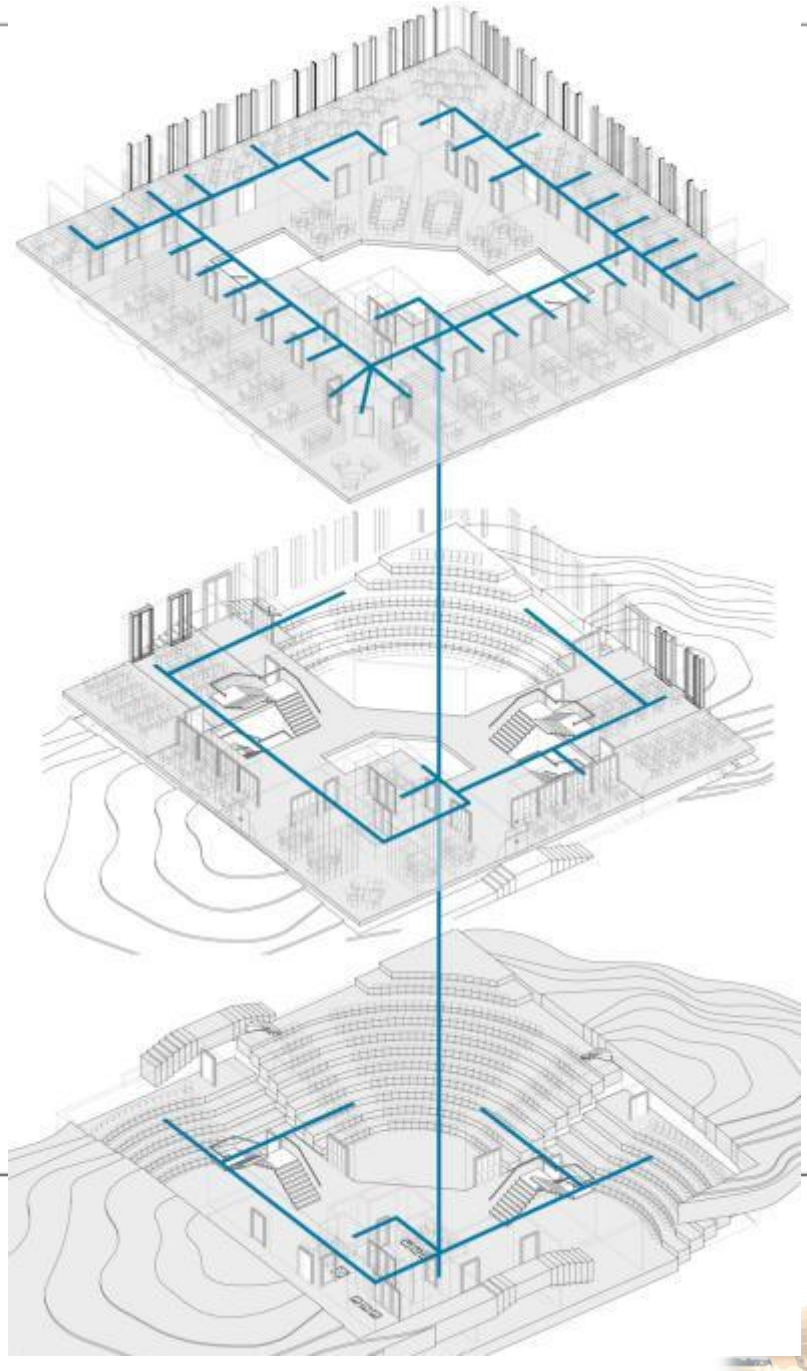
NIGHT COOLING

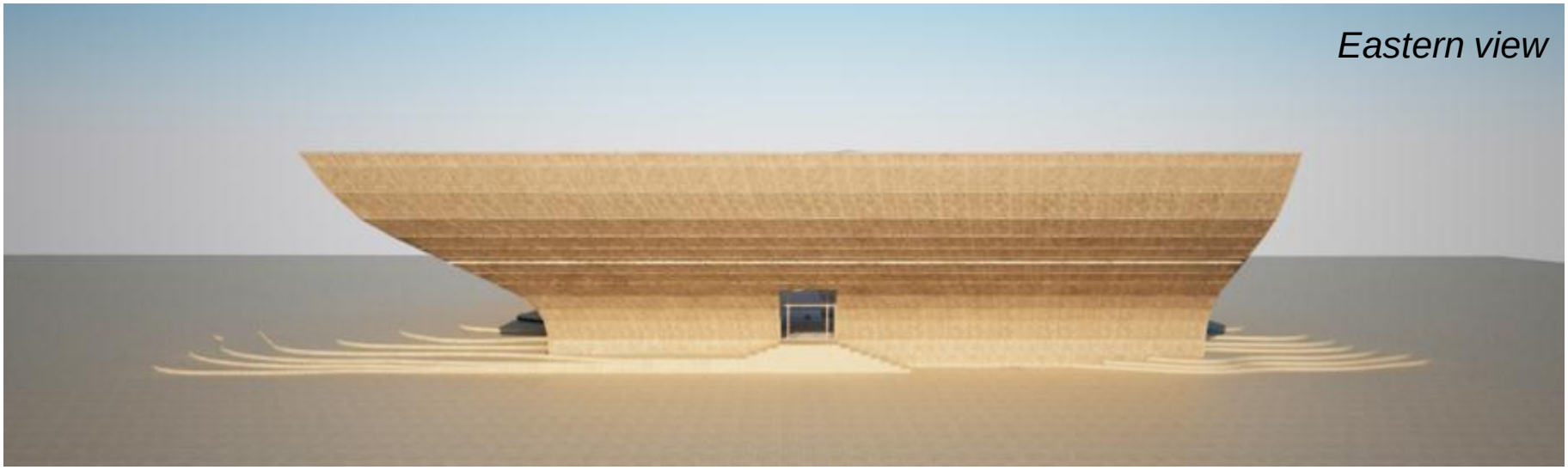
DUCTWORK SCHEME

FIRST FLOOR

GROUNDFLOOR

UNDERGROUND

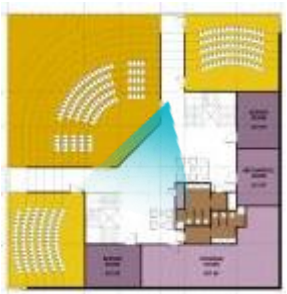




INVERTED MOUND
ELEVATIONS

INVERTED MOUND

EXTERIOR VIEW

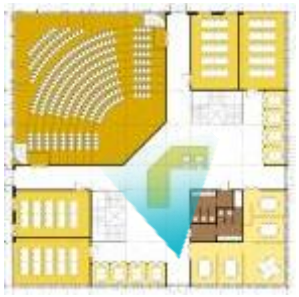


INVERTED MOUND

INTERIOR VIEWS

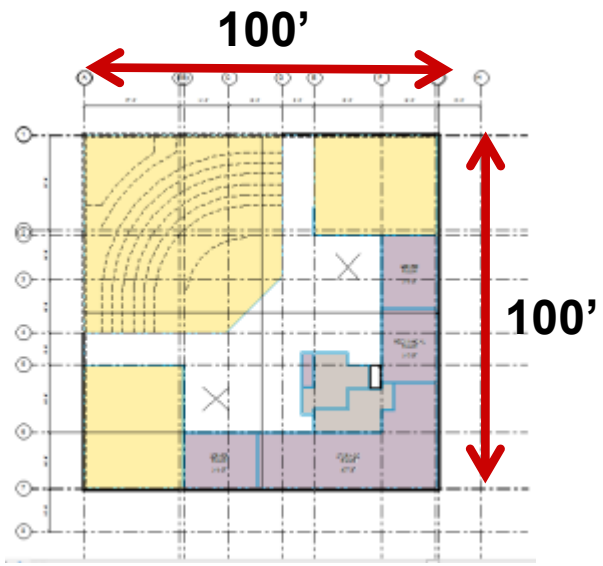
INVERTED MOUND

INTERIOR VIEWS

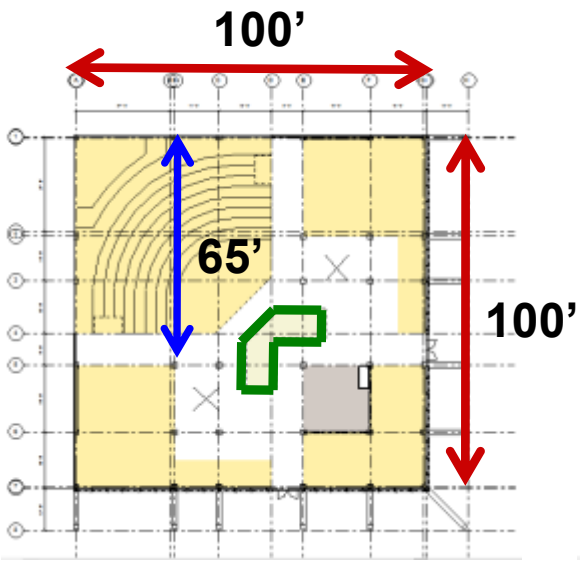


INVERTED MOUND

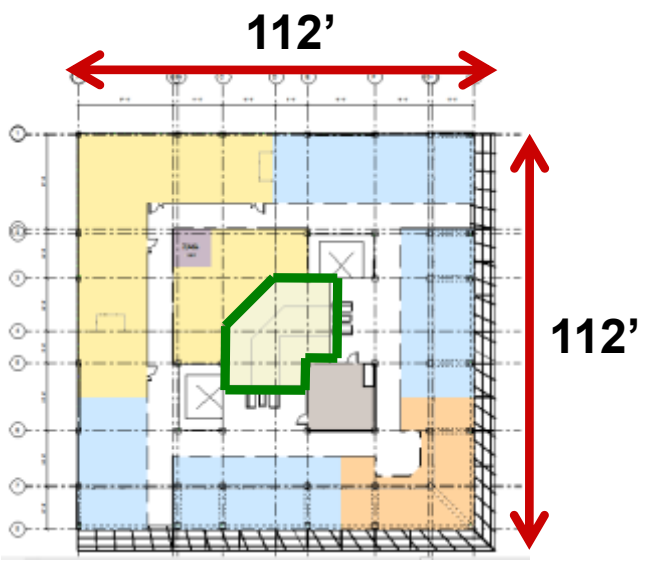
INTERIOR VIEWS



UNDERGROUND



GROUND FLOOR



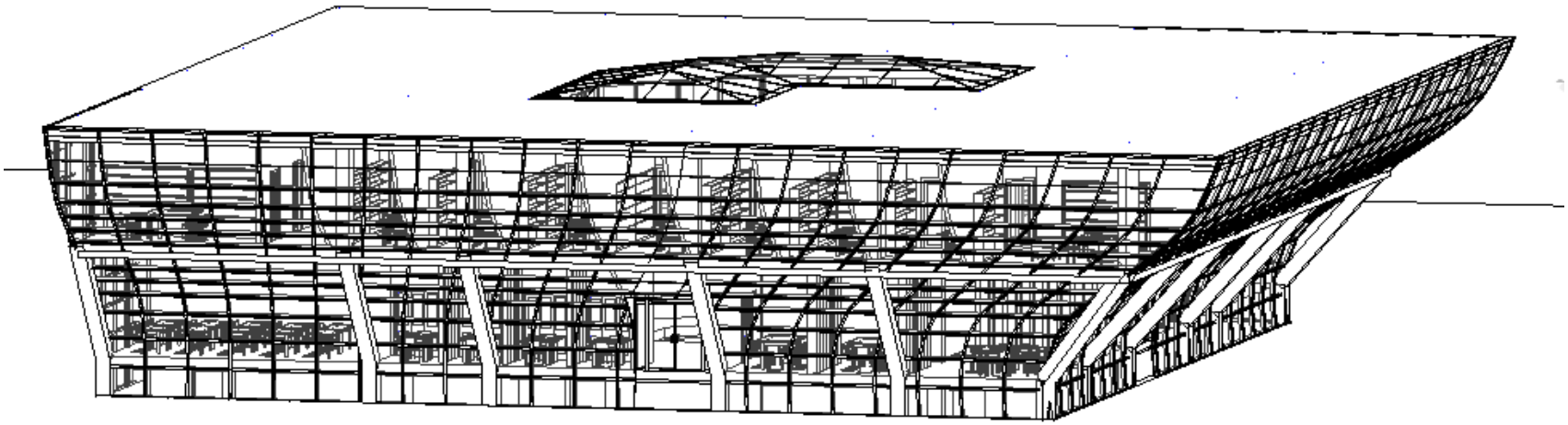
FIRST FLOOR

- 65’ span over Auditorium
- Atrium of varying size between floors
- Regular bay sizes
- Overhanging First Floor

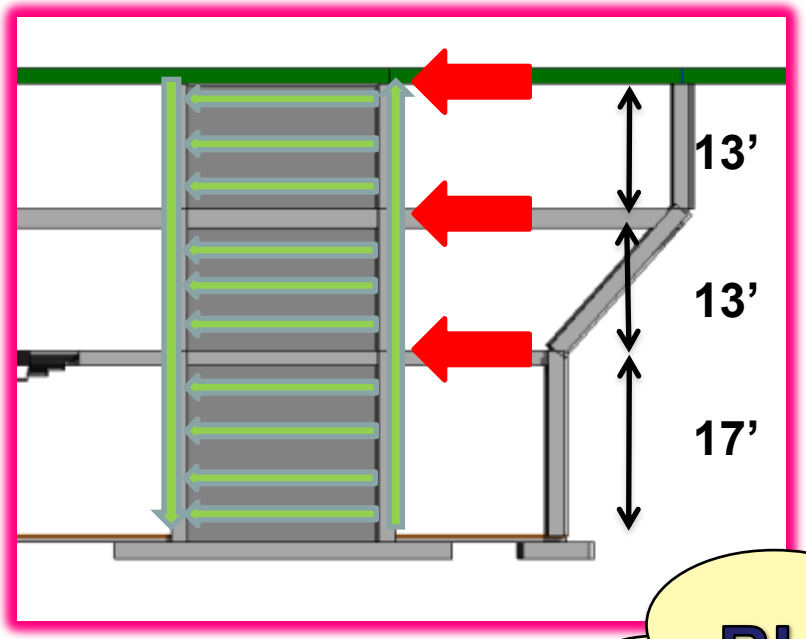
INVERTED MOUND

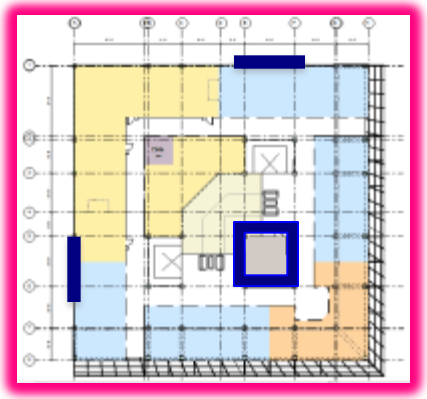
STRUCTURAL CONSIDERATIONS

Structural Alternatives: BUBBLEDECK *and* STEEL COMPOSITE DECK

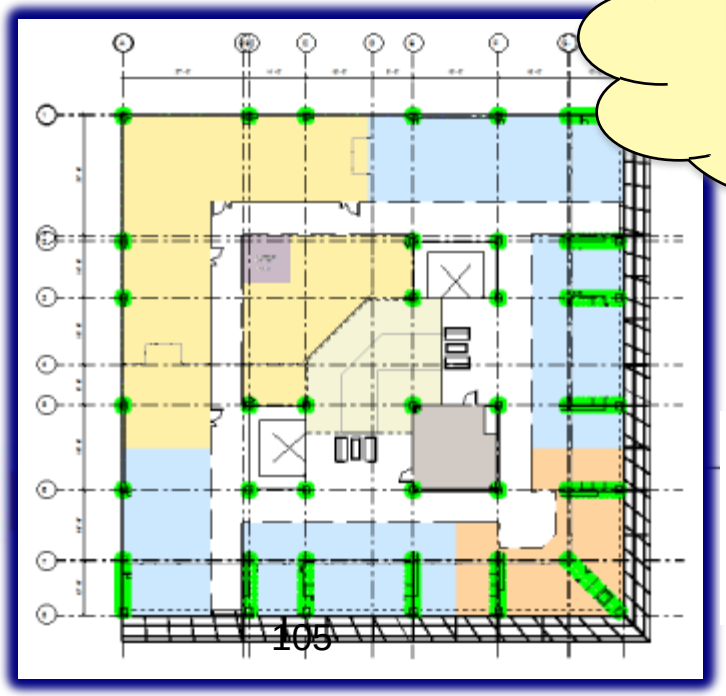


LFRS: Concrete Shear Walls

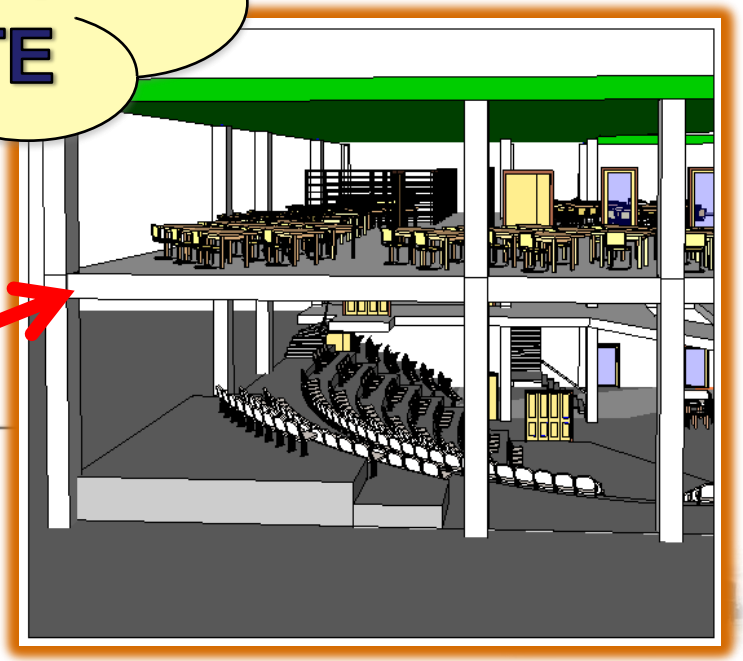




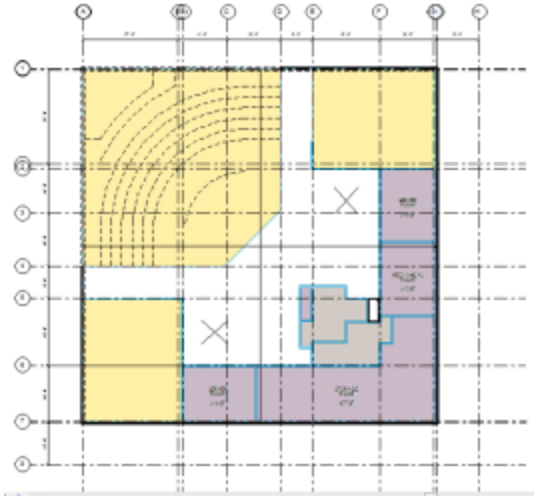
BUBBLE DECK CONCRETE



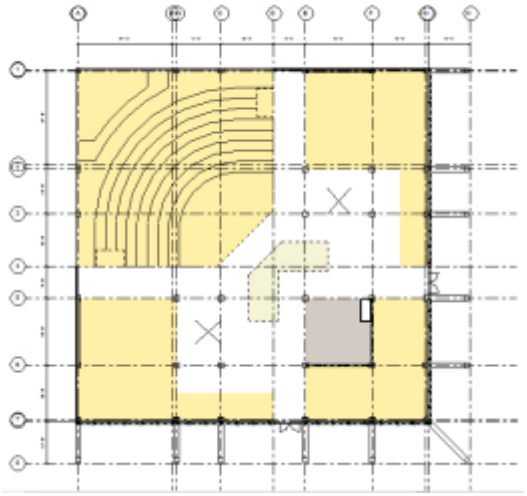
Large slab depth of 20 inches



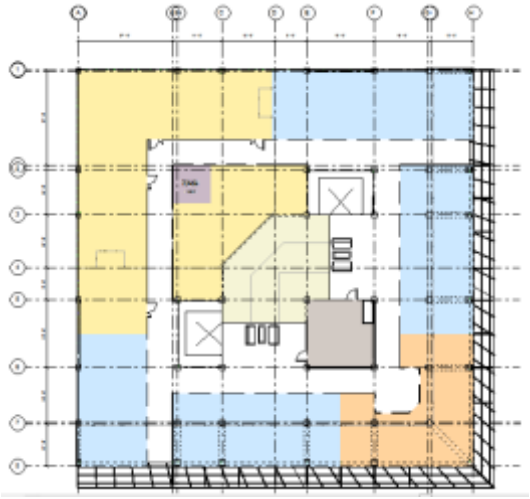
BUBBLEDECK



UNDERGROUND



GROUND FLOOR



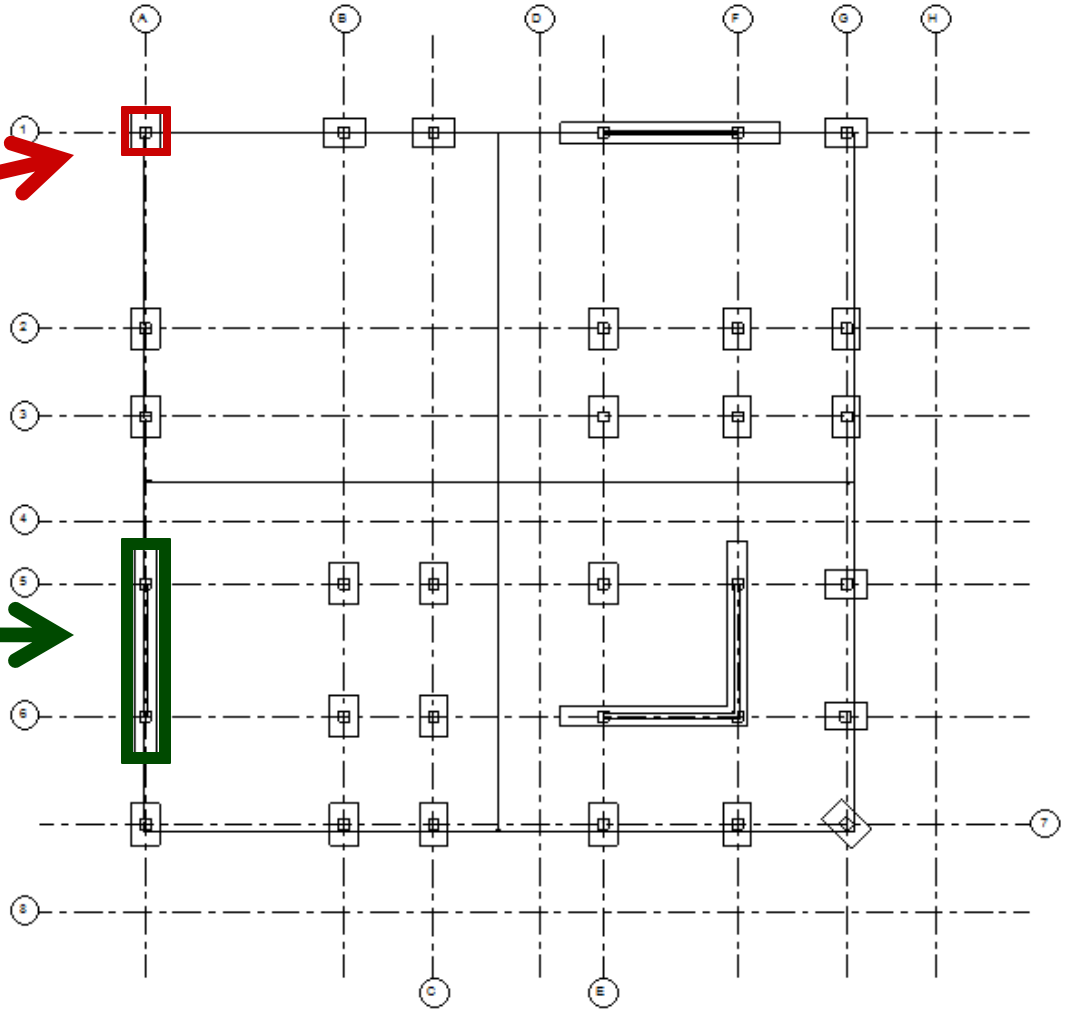
FIRST FLOOR

- Typ. Slab Thickness: **13.5”**
- Auditorium Slab Thickness: **20”**
- Square Footings: **6’ x 6’, 2’ deep**

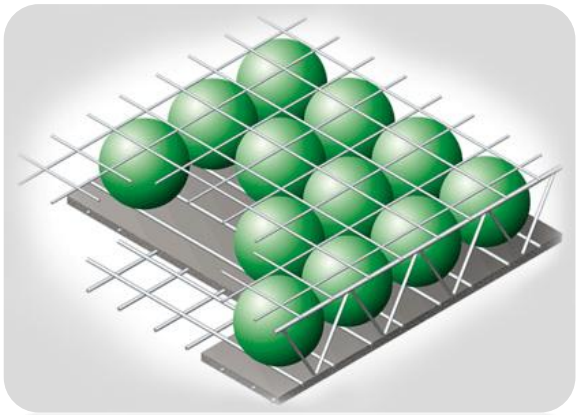
- Worst Columns:
  - Underground: **6’ x 6’**
  - Ground Floor: **9’ x 9’**
  - First Floor: **11’ x 11’**

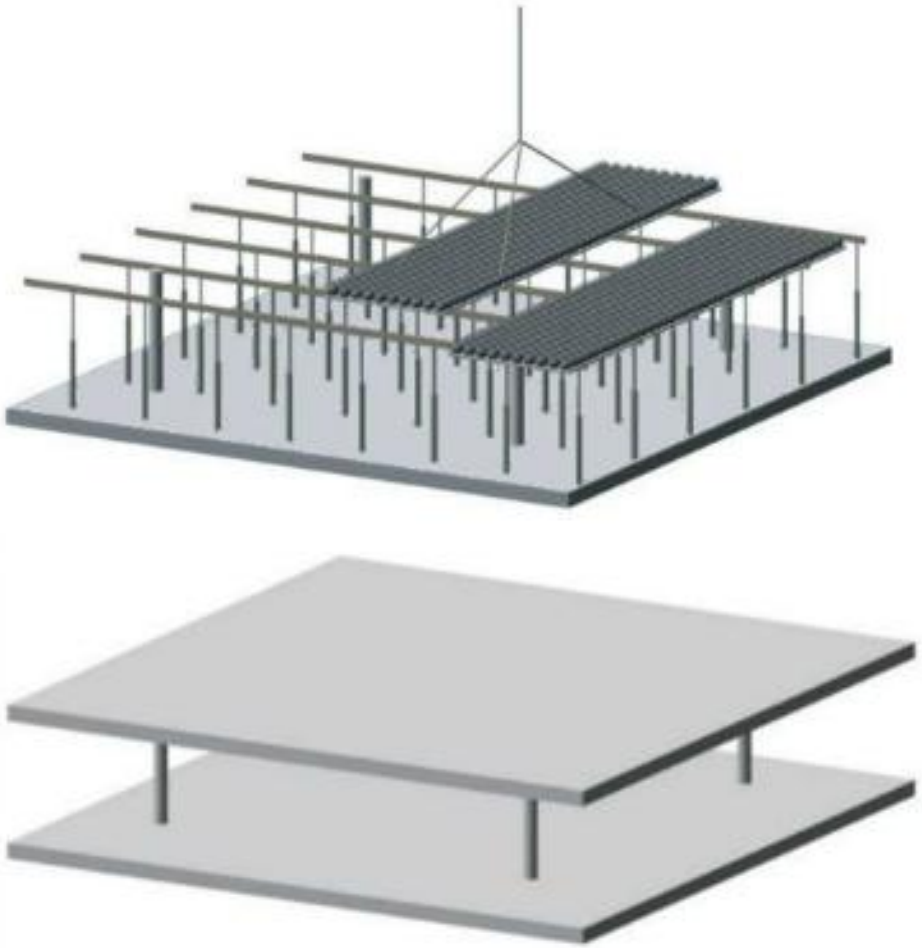
FOUNDATION PLAN

- Spread footings for columns
- Continuous footings for shear walls



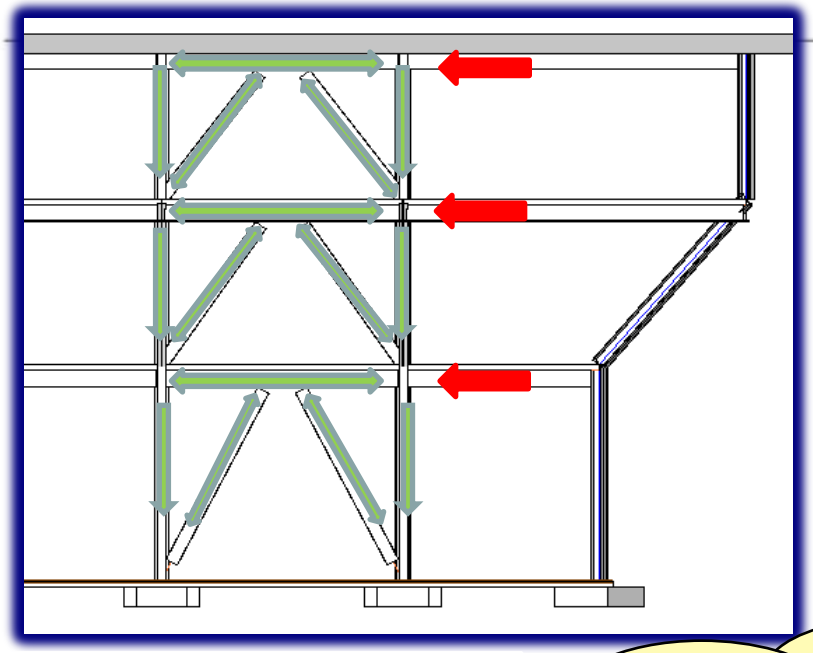
FOUNDATION SOLUTION

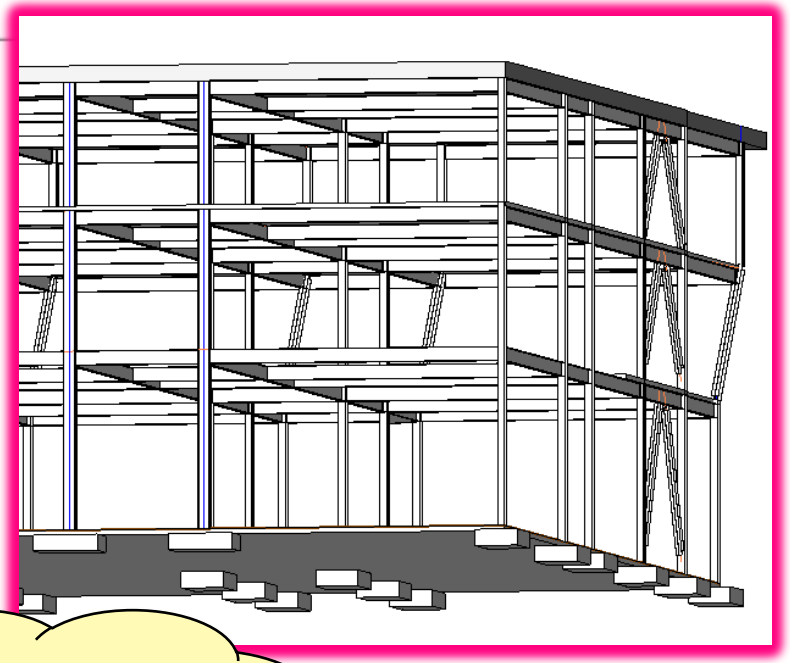




INVERTED MOUND

EASY BUBBLEDECK INSTALLATION

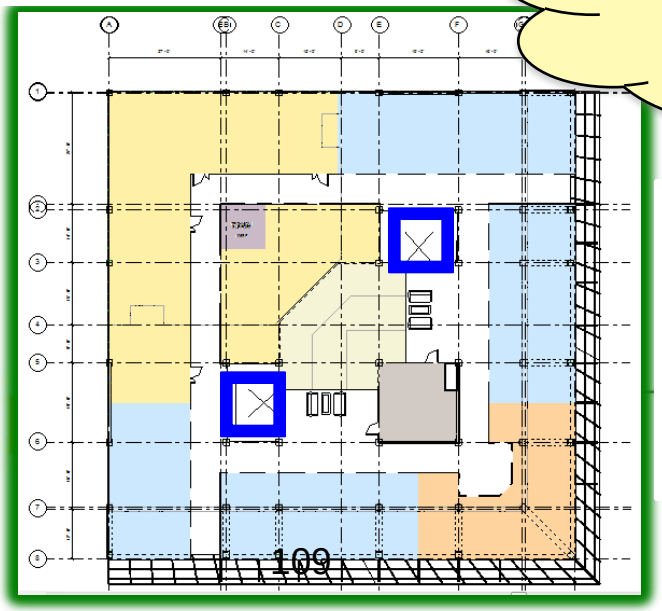




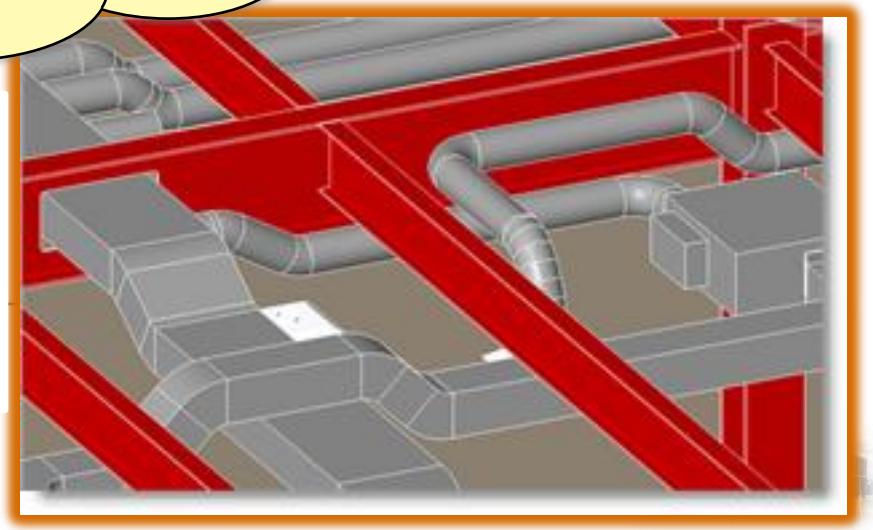
LFRS: Eccentrically Braced Frames

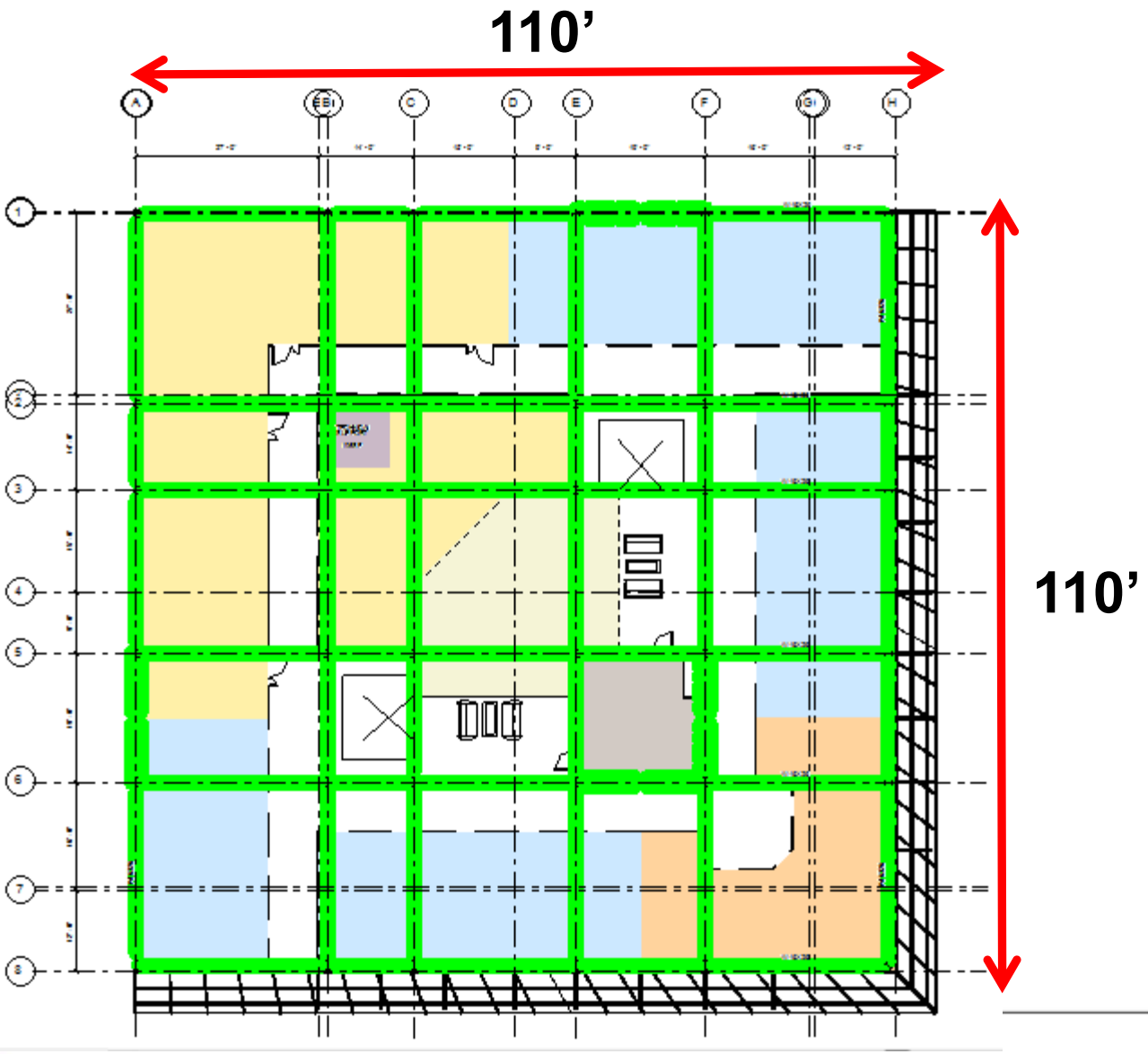
STEEL COMPOSITE DECK

High constructability



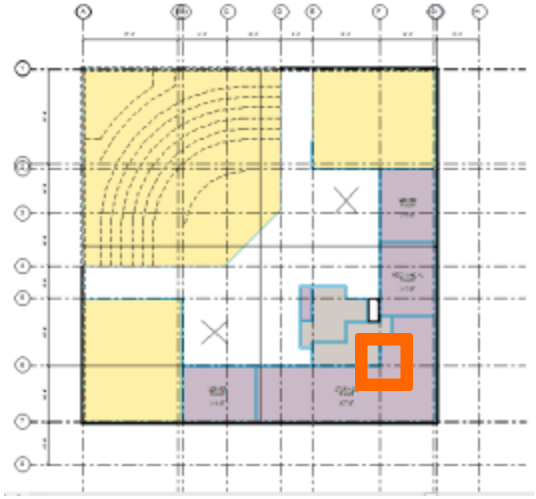
Potential MEP problems



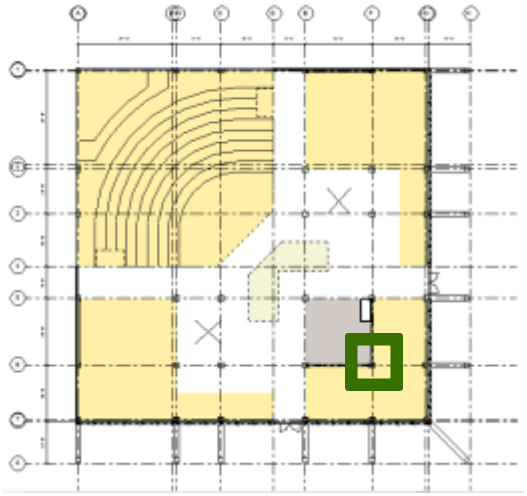


INVERTED MOUND

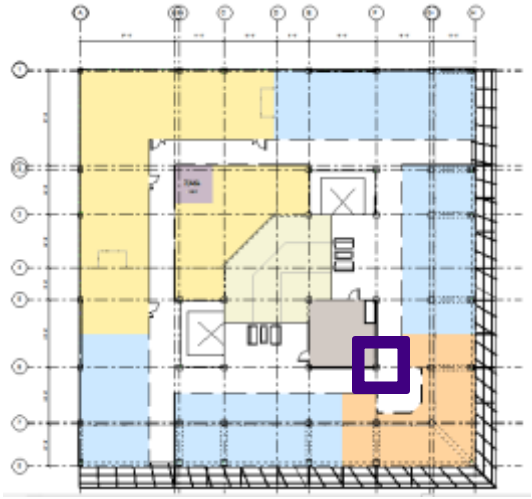
STEEL COMPOSITE DECK



UNDERGROUND



GROUND FLOOR



FIRST FLOOR

Typ. Floor Beam: **W14x22**

Typ. Roof Beam: **W12x19**

Typ. Girder: **W24x55**

Square Footings: **7’ x 7’, 3’ deep**

Worst Columns:

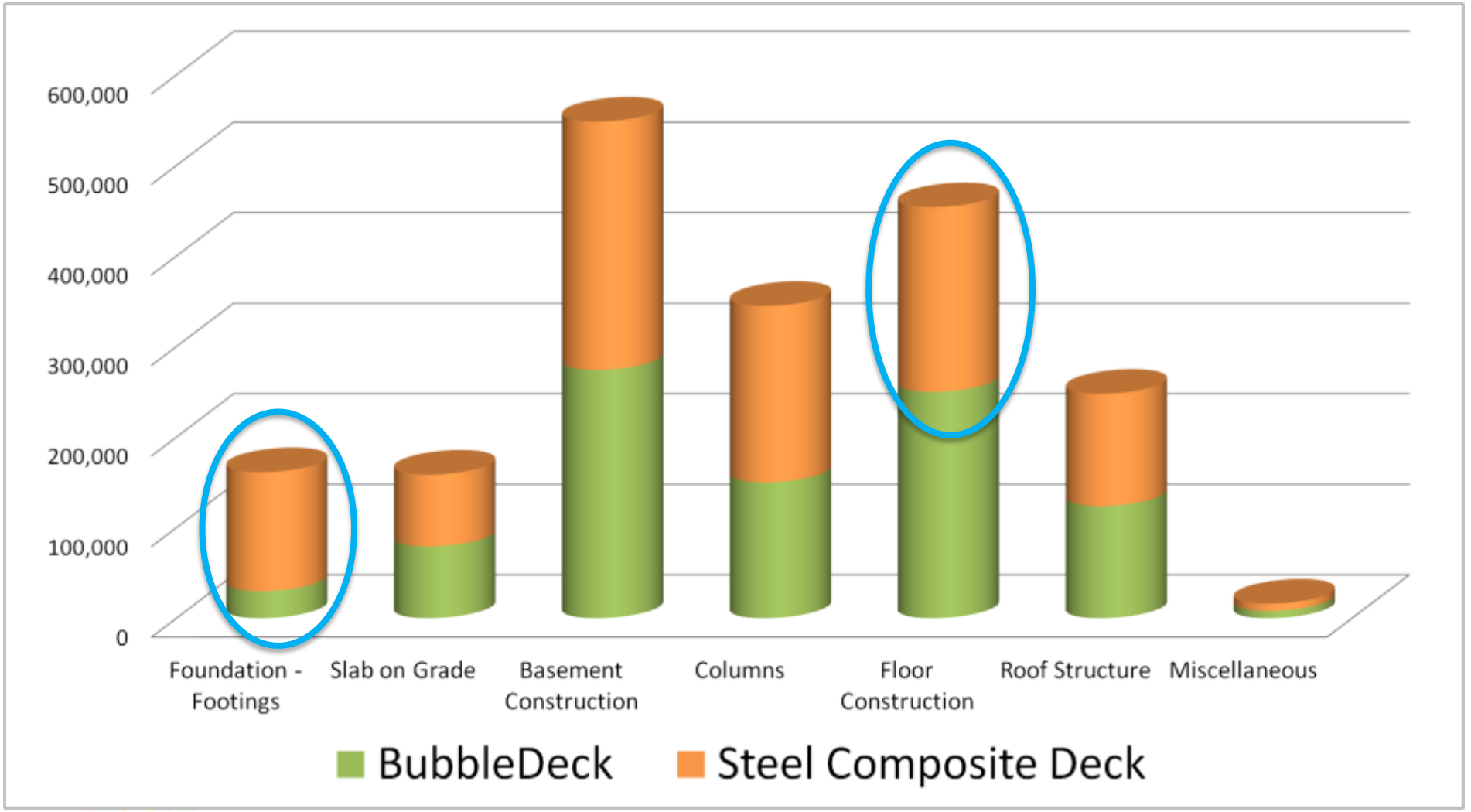
- Underground: **W12x35**
- Ground Floor: **W12x35**
- First Floor: **W12x35**

BUBBLEDECK VS. STEEL COMPOSITE DECK

DEAD	Roof	**75**	psf
	Floor	**200**	psf
LIVE	Roof	**20**	psf
	Floor	**100**	psf
SEISMIC	Base Shear	**422**	kip
	Roof	**296**	kip
	1st Floor	**126**	kip

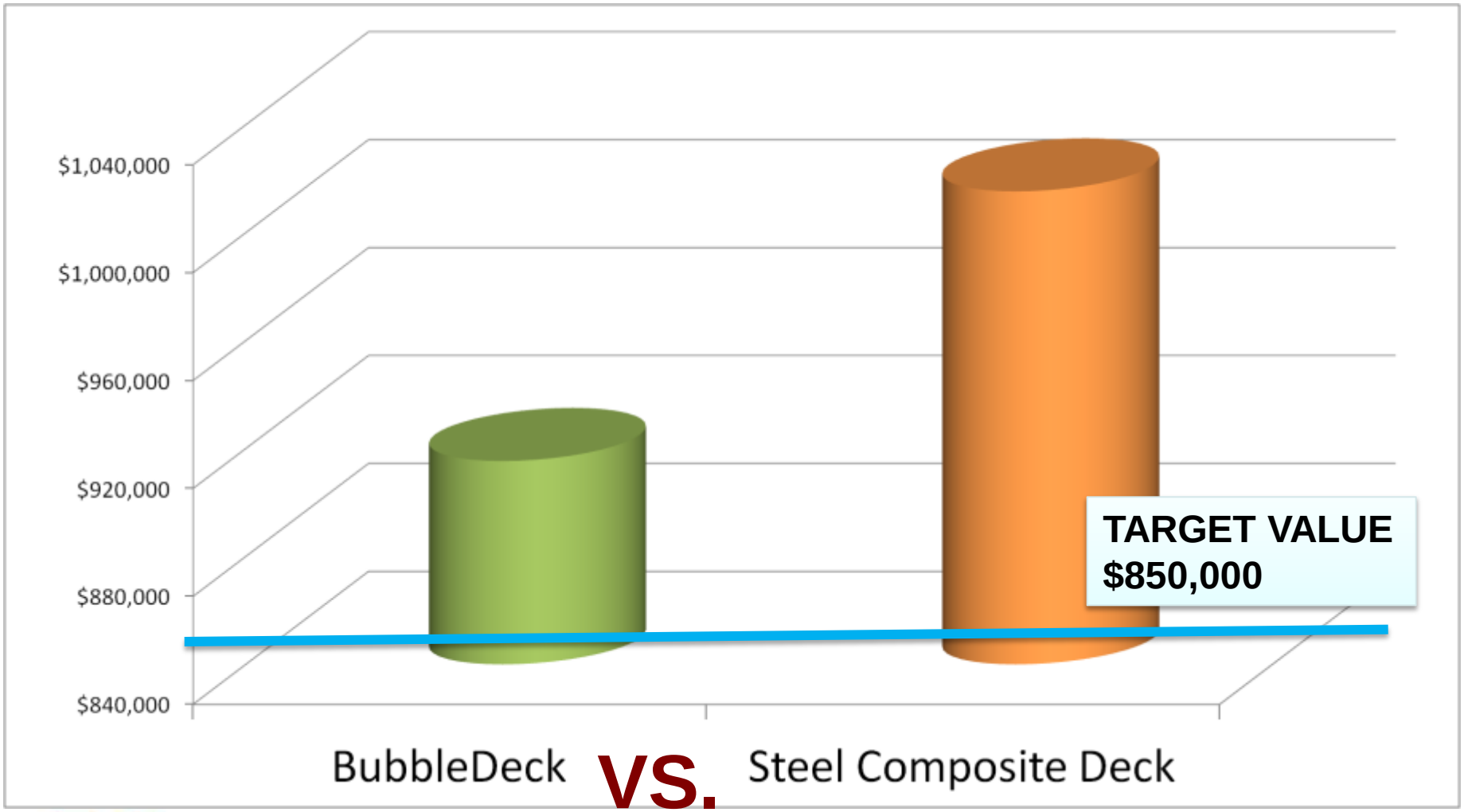
DEAD	Roof	**75**	psf
	Floor	**100**	psf
LIVE	Roof	**20**	psf
	Floor	**100**	psf
SEISMIC	Base Shear	**190**	kip
	Roof	**133**	kip
	1st Floor	**56**	kip

INVERTED MOUND
LOADING CRITERIA



INVERTED MOUND

STRUCTURAL COST BREAKDOWN

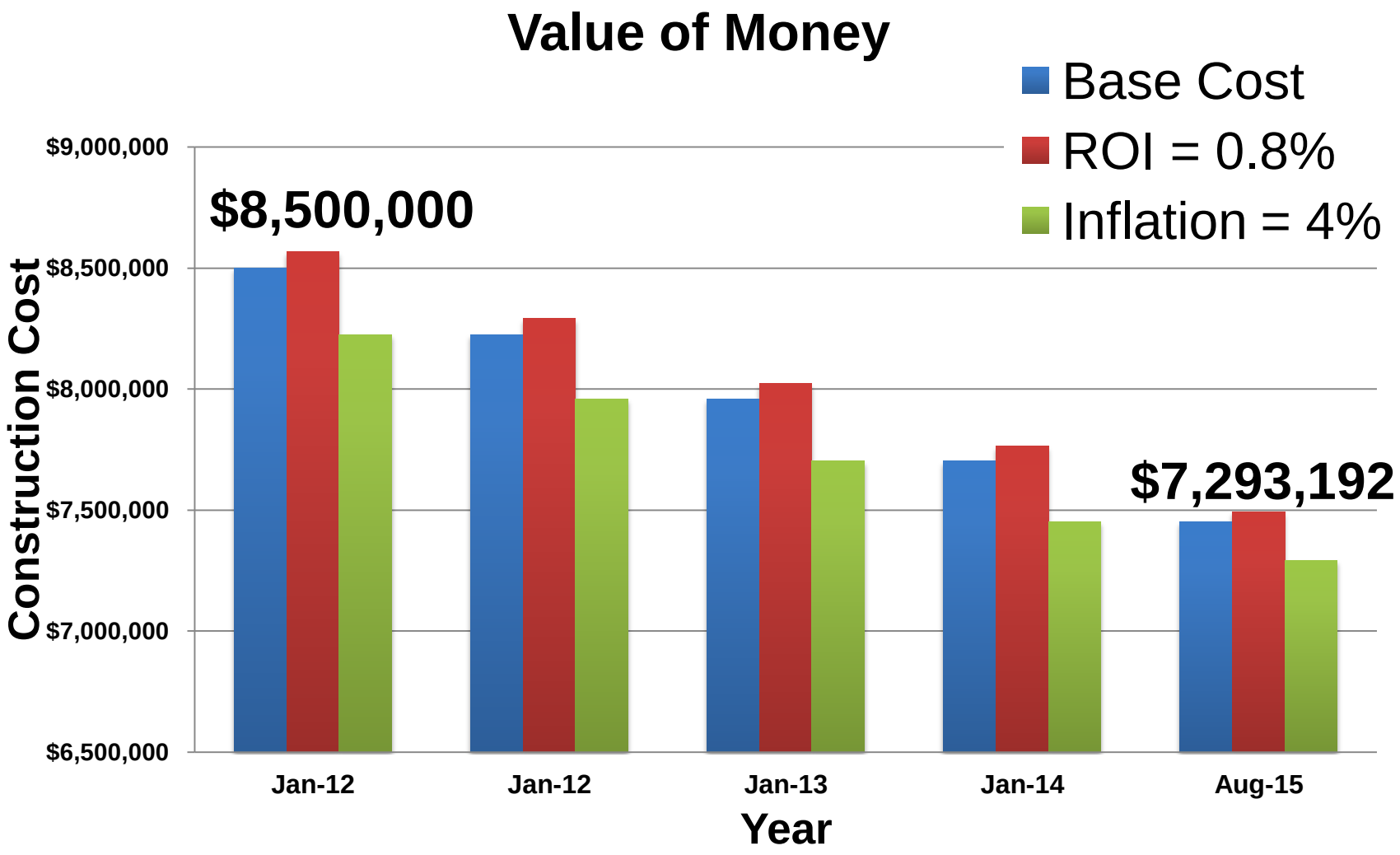


INVERTED MOUND

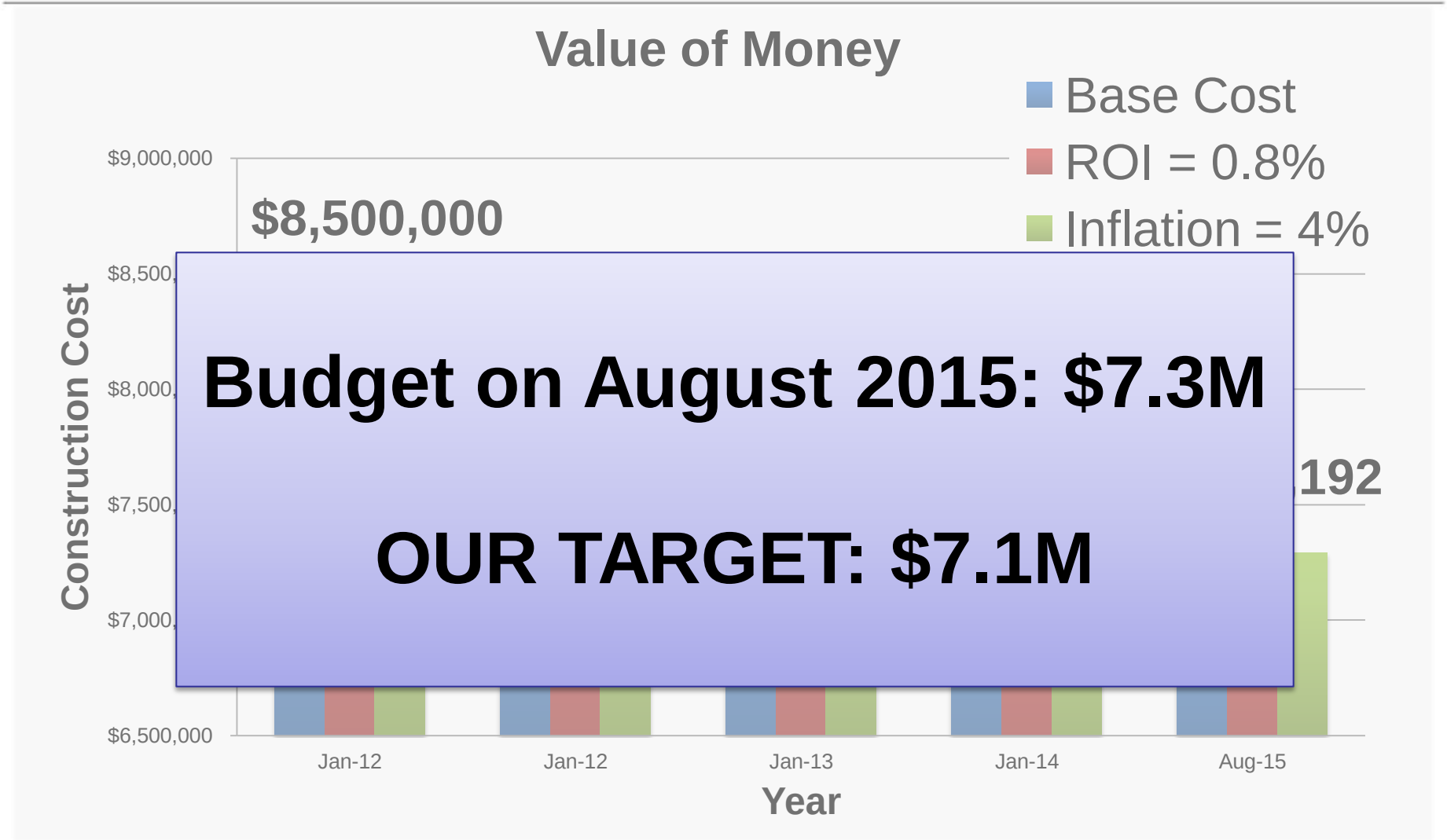
STRUCTURAL COSTS

What Next?

TARGET VALUE DESIGN



OVERALL GRANT

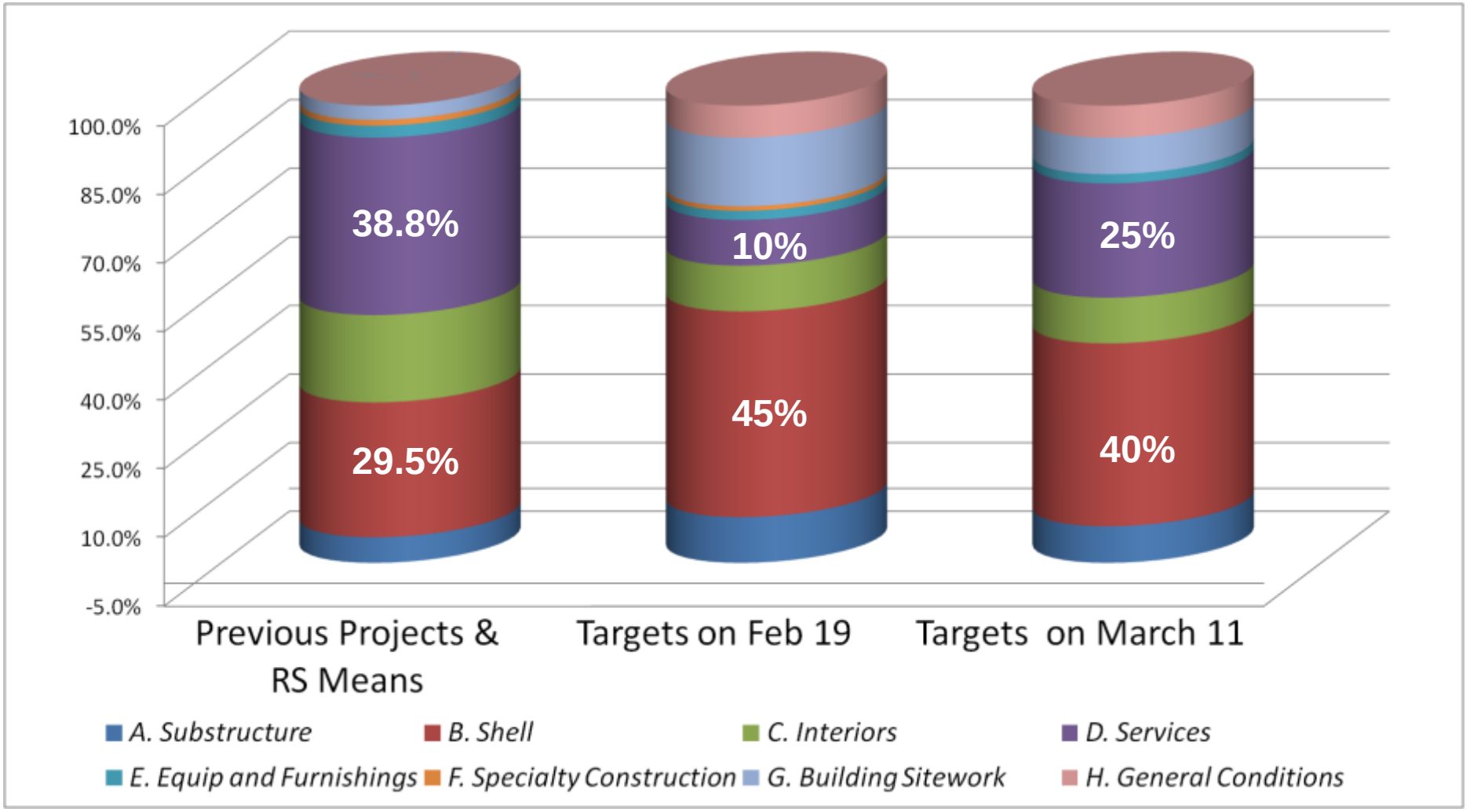


OVERALL GRANT

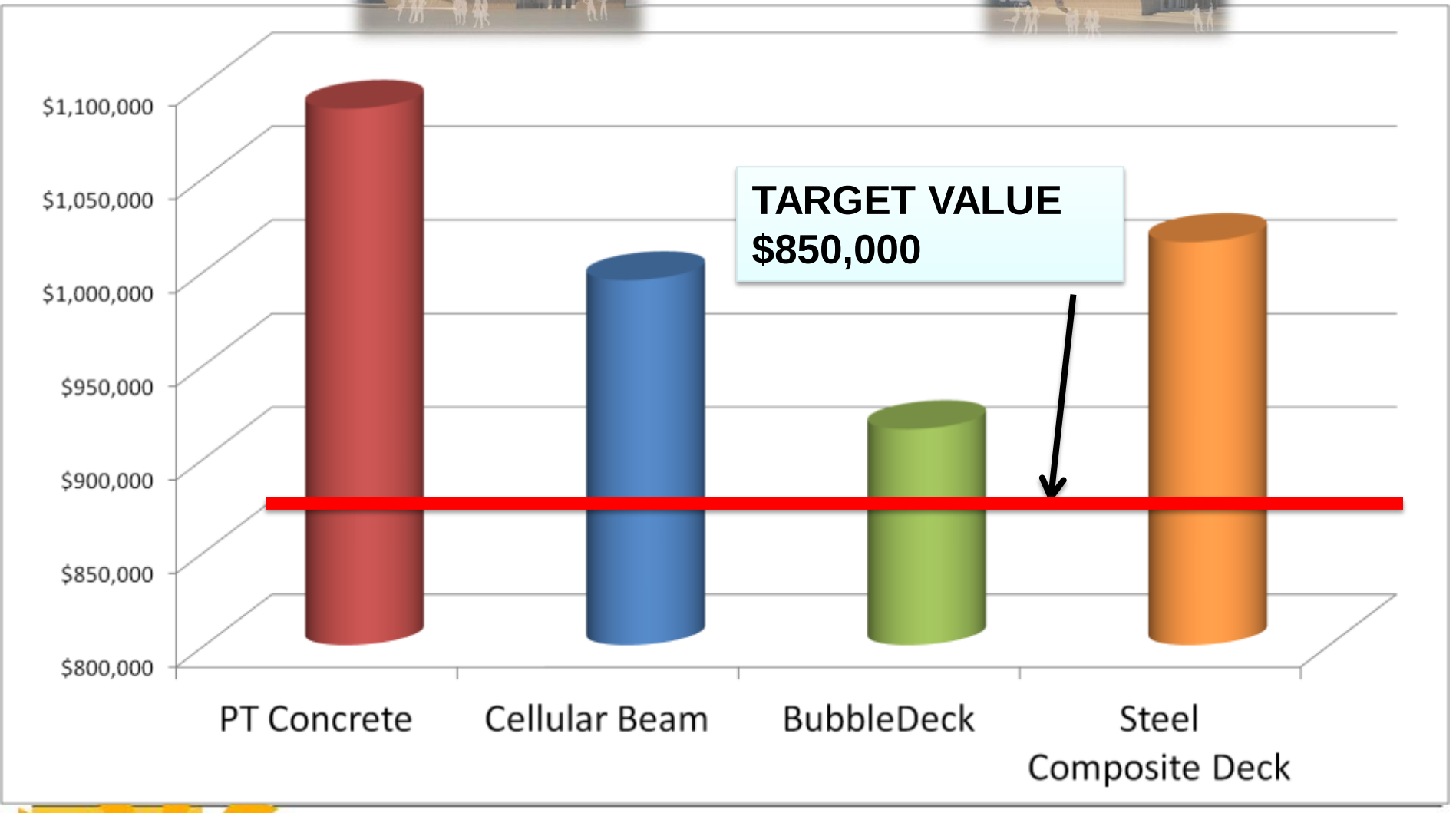
Rating of Importance

Category	Description	Owner's Value (Hoss)	Owner's Value (Sinan)	Owners' Average
A. Substructure	Building Location on Site	7	10	8.5
B. Shell	Exterior Enclosure (Façade)	9	9	9
	Roof	8	7	7.5
	Exterior Enclosure (Walls)	7	6	6.5
C. Interiors	Interior Finishes (Partitions, Floors, Doors)	8	9	8.5
D. Services	Energy Efficiency	10	10	10
	Indoor Air Quality	9	8	8.5
	Elevators	6	4	5
	Lighting	8	8	8
	Communications and Electrical Services	7	7	7
E. Equipment and Furnishings	Auditorium Furnishing	9	6	7.5
	Classroom Furnishing	9	6	7.5
F. Specialty Construction	Special or Distinguishing Features	10	7	8.5
G. Building Sitework	Landscaping	7	8	7.5
H. Conditions	Contingency	7	8	7.5

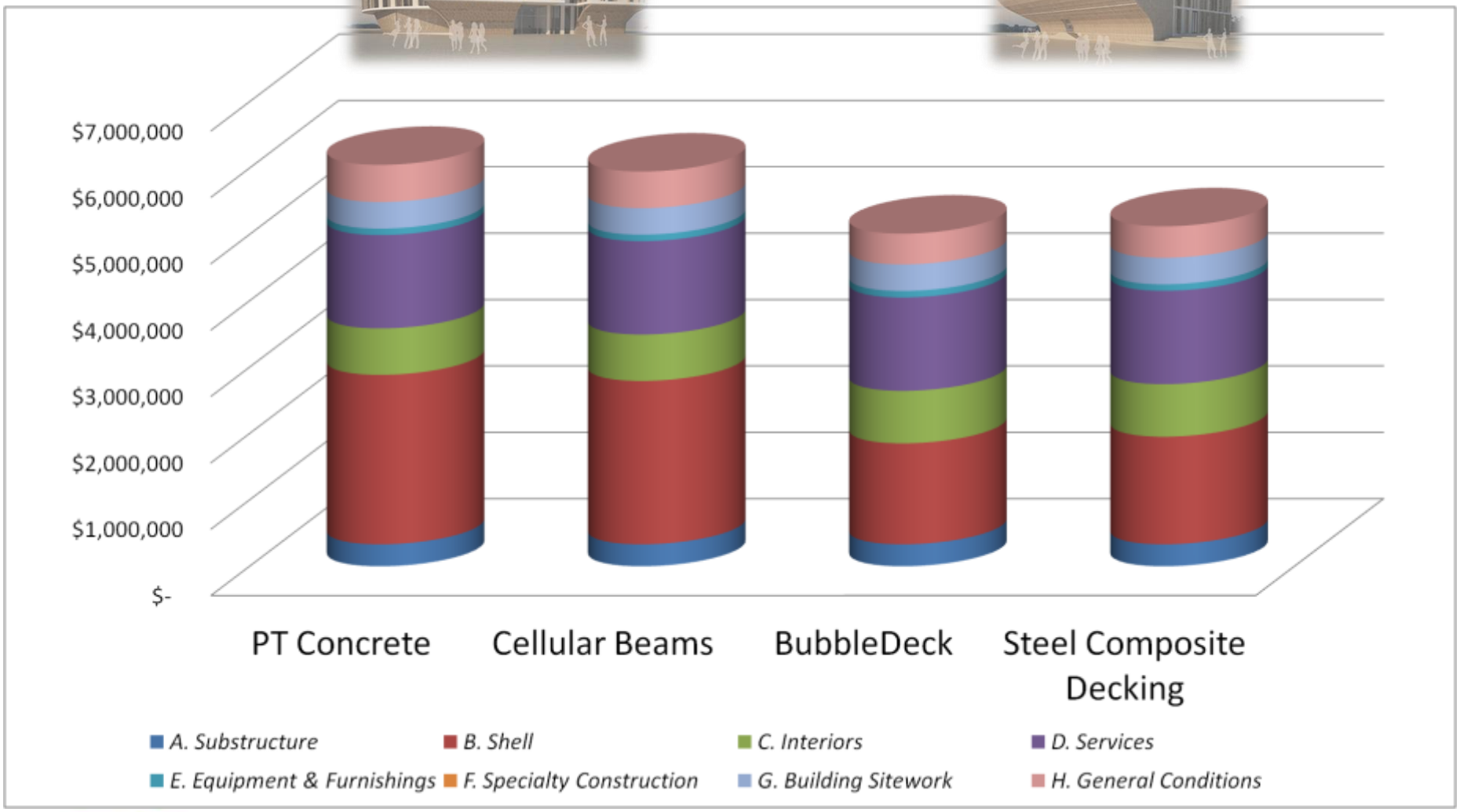
OWNERS' VALUES



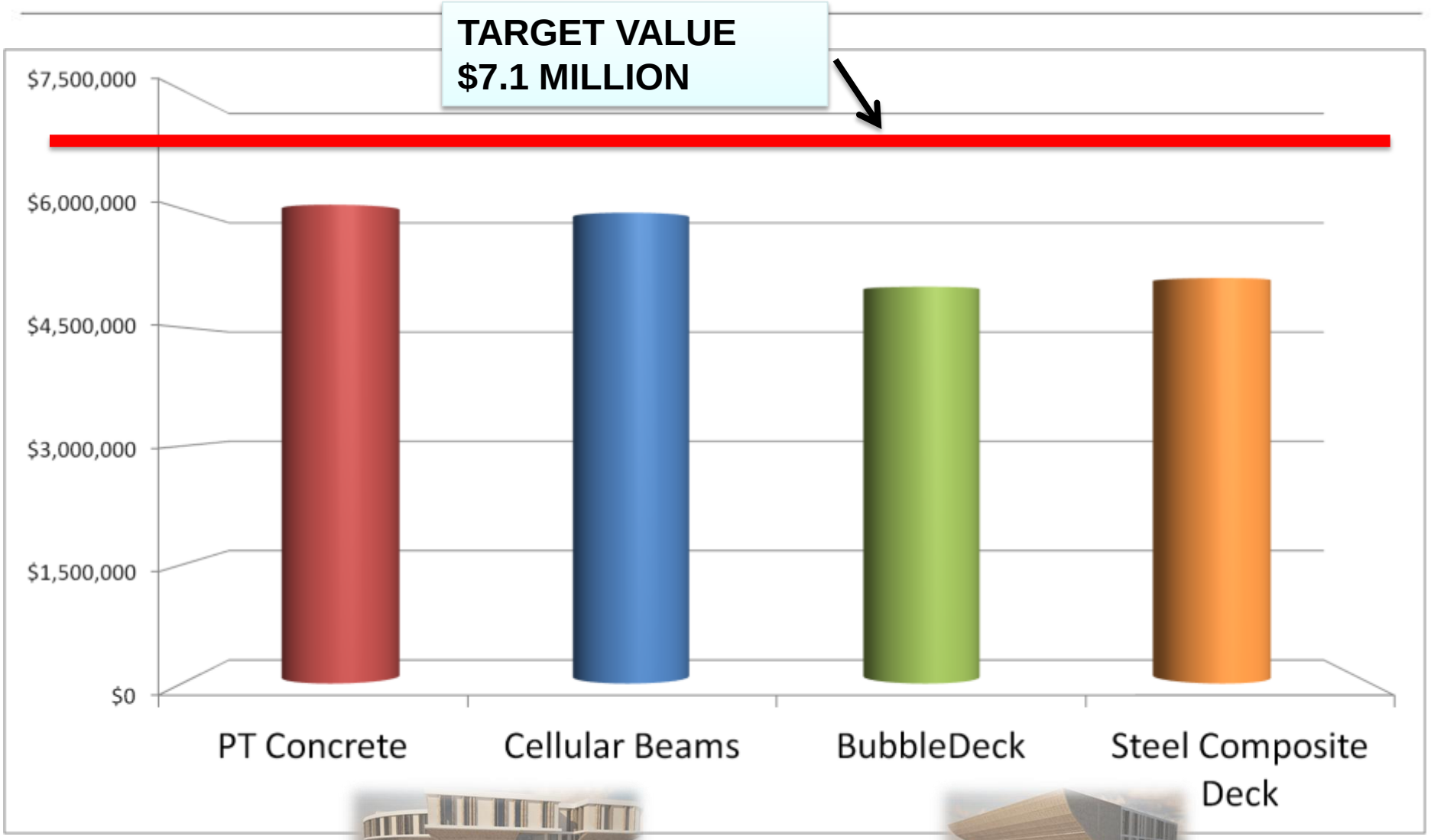
Target Values Changing to Reflect Better Understanding of Costs



SUMMARY OF STRUCTURAL COST



BREAKDOWN OF SUMMARY COSTS



SUMMARY OF TOTAL COSTS

Start Construction by Aug 3, 2015 — S

Milestone 1: Enclosed building by Jan 1, 2016 — 1

Milestone 2: Access to labs by Apr 30, 2016 — 2

Milestone 3: Finished construction by Aug 3, 2016 — 3

	2015						2016					
Month	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Maj	Jun	Jul
Activities	Site preparation, excavation, foundation slab, floors, facade & roof					Interior walls, ceiling, floor finishes, MEP, Lab equipment & furnishing				Equipment, furnishing, landscape & final cleaning		

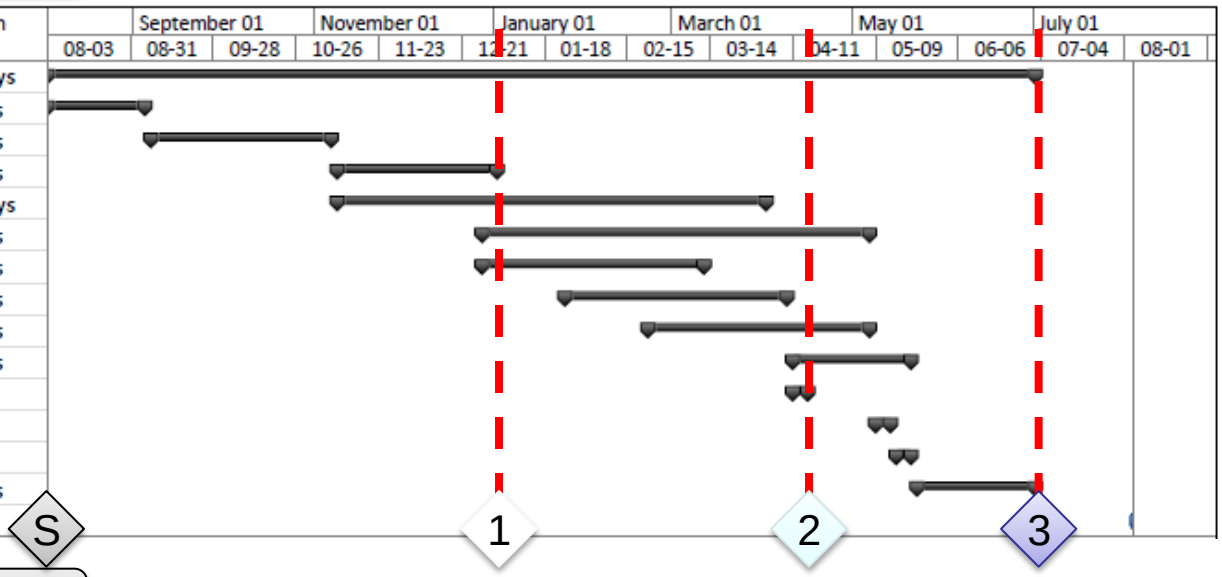
S 1 2 3

THREE KEY MILESTONES

Cellular Beams

1 Jan, 2016 15 Apr, 2016 1 Jul,2016

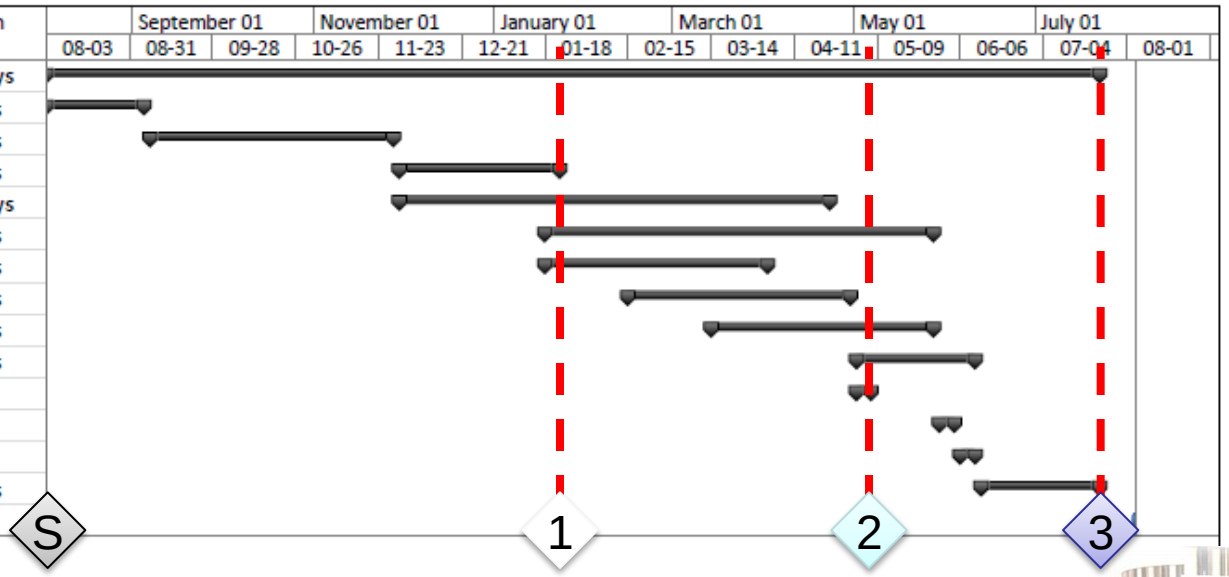
ID	Task Name	Duration
1	Construction time	240 days
2	Sitework	25 days
5	Substructure	45 days
8	Shell	40 days
11	Services	105 days
15	Interior	95 days
16	Level -1	55 days
22	Level 0	55 days
28	Level 1	55 days
34	Equipment and Furnishing	30 days
35	Level 0	5 days
38	Level 1	5 days
41	Level -1	5 days
44	Building Sitework	30 days
47	Final move in date	1 day



Post-Tensioned

22 Jan, 2016 5 May, 2016 22 Jul,2016

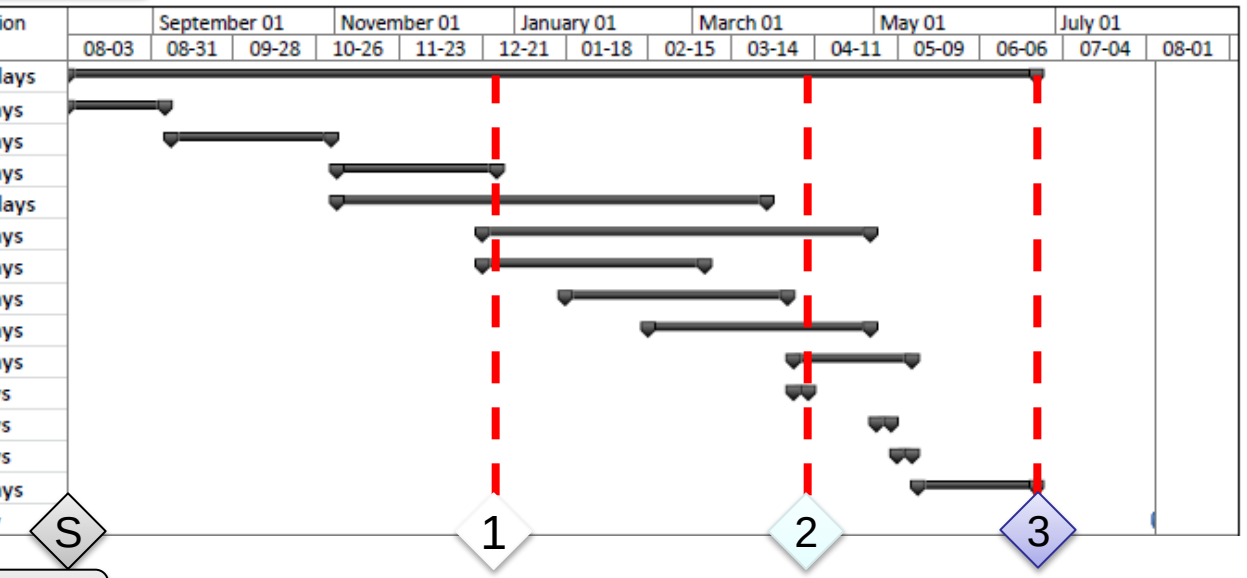
ID	Task Name	Duration
1	Construction time	255 days
2	Sitework	25 days
5	Substructure	60 days
8	Shell	40 days
11	Services	105 days
15	Interior	95 days
16	Level -1	55 days
22	Level 0	55 days
28	Level 1	55 days
34	Equipment and Furnishing	30 days
35	Level 0	5 days
38	Level 1	5 days
41	Level -1	5 days
44	Building Sitework	30 days
47	Final move in date	1 day



Steel Composite Decking

15 Dec, 2015 08 Apr, 2016 24 Jun,2016

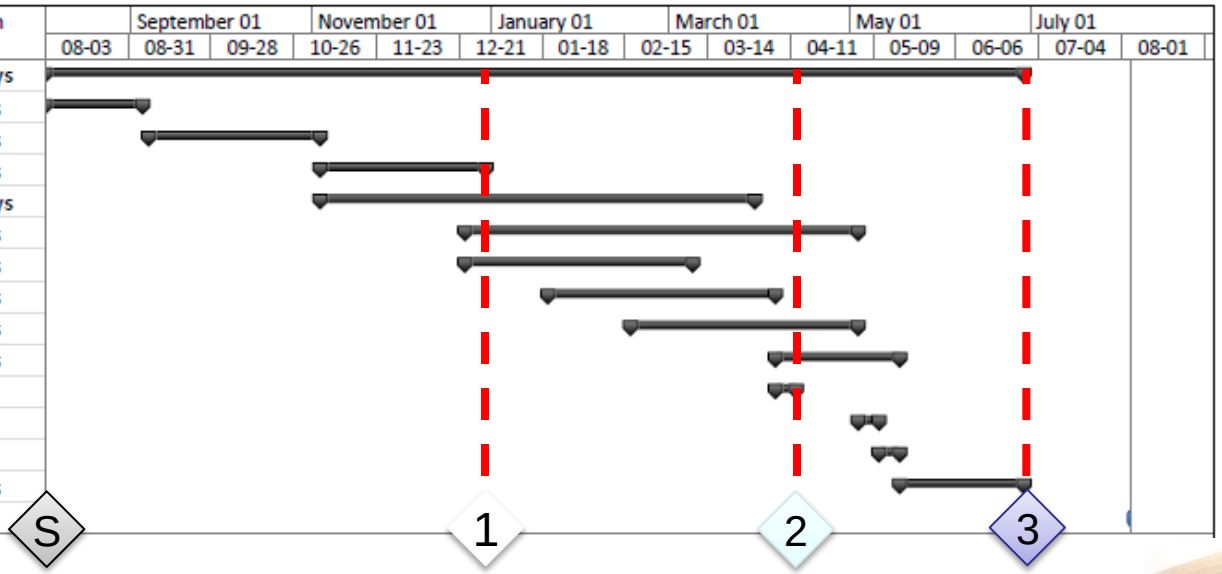
ID	Task Name	Duration
1	Construction time	235 days
2	Sitework	25 days
5	Substructure	40 days
8	Shell	40 days
11	Services	105 days
15	Interior	95 days
16	Level -1	55 days
22	Level 0	55 days
28	Level 1	55 days
34	Equipment and Furnishing	30 days
35	Level 0	5 days
38	Level 1	5 days
41	Level -1	5 days
44	Building Sitework	30 days
47	Final move in date	1 day



BubbleDeck

12 Dec, 2015 16 Apr, 2016 28 Jun,2016

ID	Task Name	Duration
1	Construction time	237 days
2	Sitework	25 days
5	Substructure	42 days
8	Shell	40 days
11	Services	105 days
15	Interior	95 days
16	Level -1	55 days
22	Level 0	55 days
28	Level 1	55 days
34	Equipment and Furnishing	30 days
35	Level 0	5 days
38	Level 1	5 days
41	Level -1	5 days
44	Building Sitework	30 days
47	Final move in date	1 day



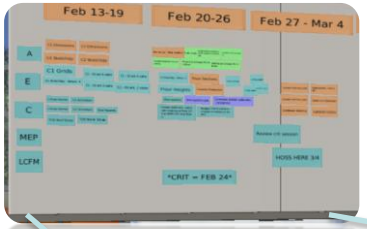
LEED OBJECTIVES

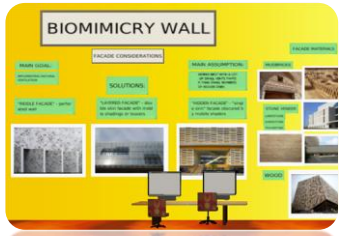
Y	?	N		Category	Received Points	Possible Points
21	5	0		Sustainable Sites	21	26
2	6	2		Water Efficiency	2	10
24	11	0		Energy and Atmosphere	24	35
8	6	0		Materials and Resources	8	14
9	0	6		Indoor Environmental Quality	9	15
2	3	1		Innovation and Design Process	2	6
0	4	0		Regional Priority Credits	0	4
66	35	9		Total	66	110

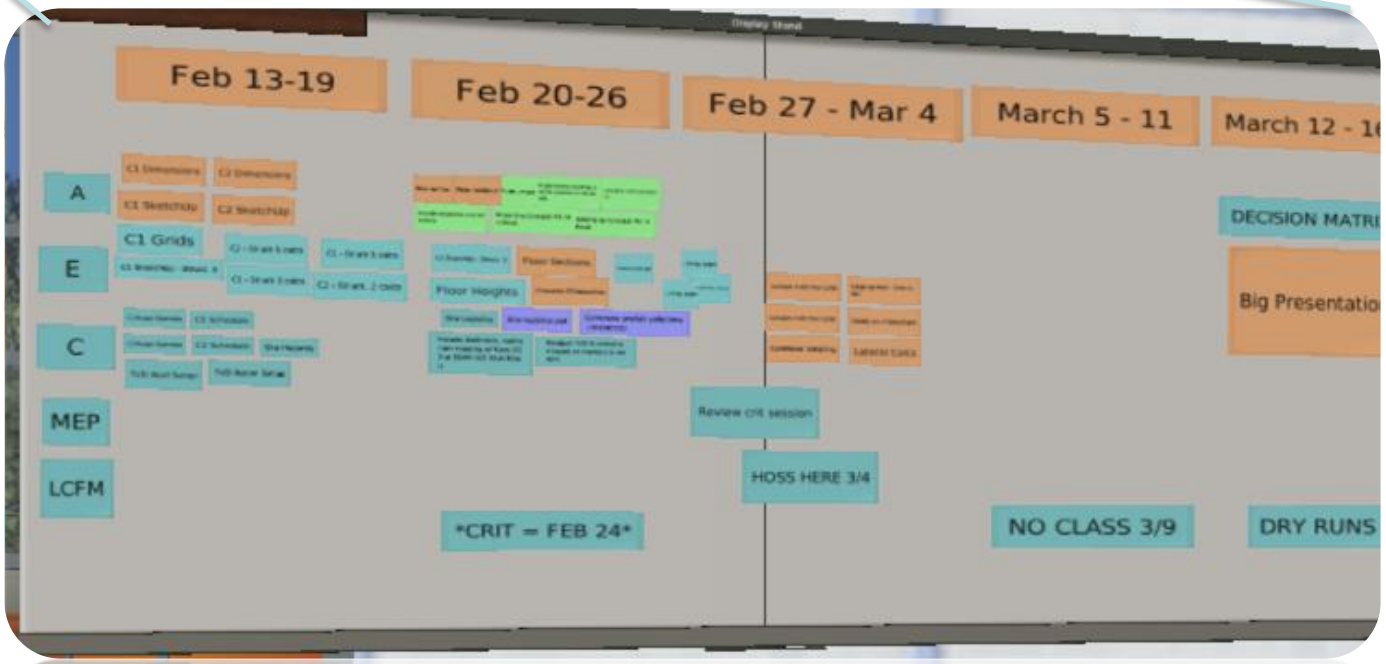
LEED GOLD - 66 POINTS

IMPLEMENTATION TO ACHIEVE

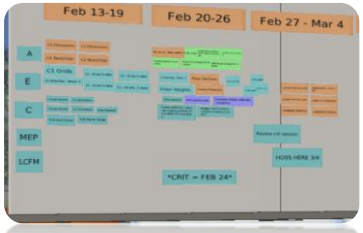
OUR TEAM PROCESS

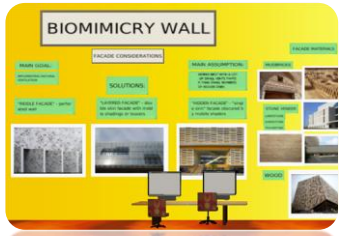


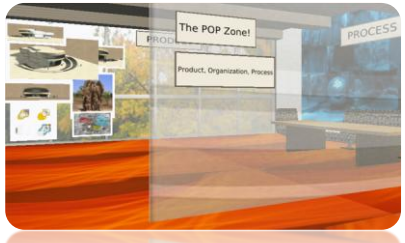




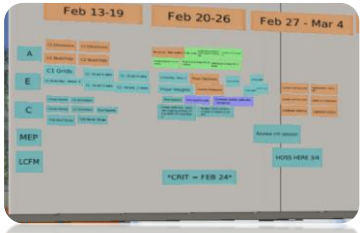
TASKS PULLING SESSION

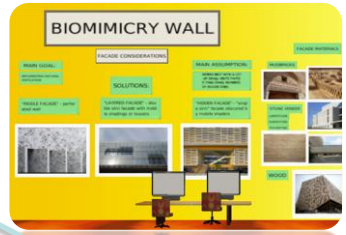




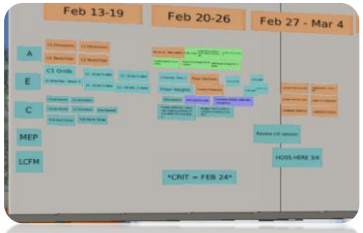


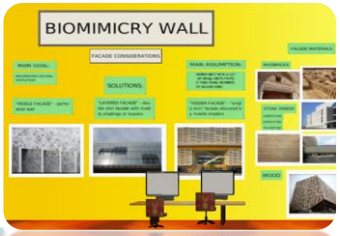
MEETING ROOM

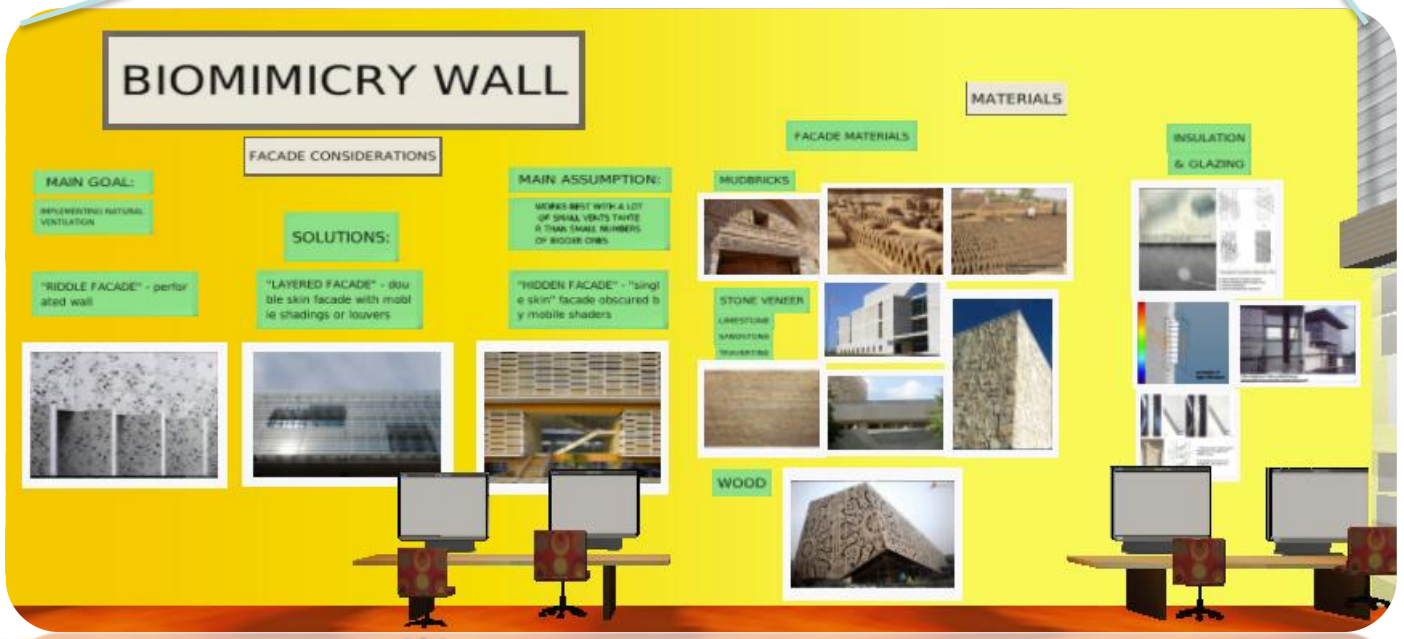




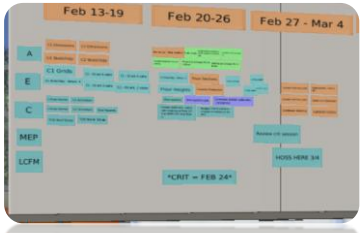
TARGET VALUE DESIGN ROOM





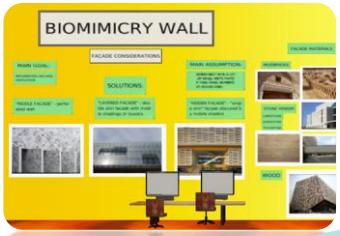


BIOMIMICRY WALL

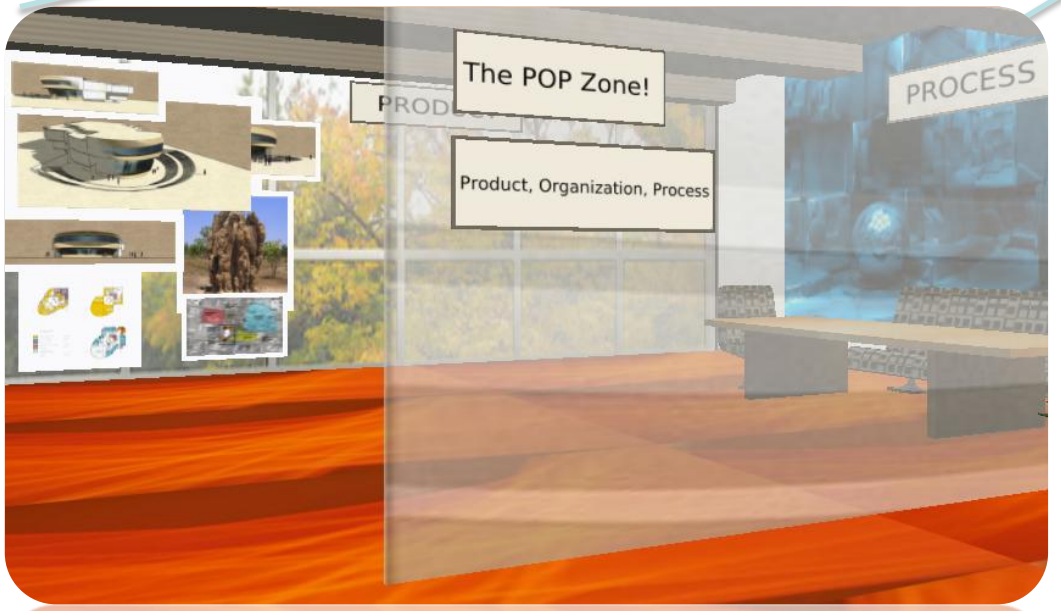

Feb 13-19
Feb 20-26
Feb 27 - Mar 4


The Gathering Room


Concept 1 - Bumblebee

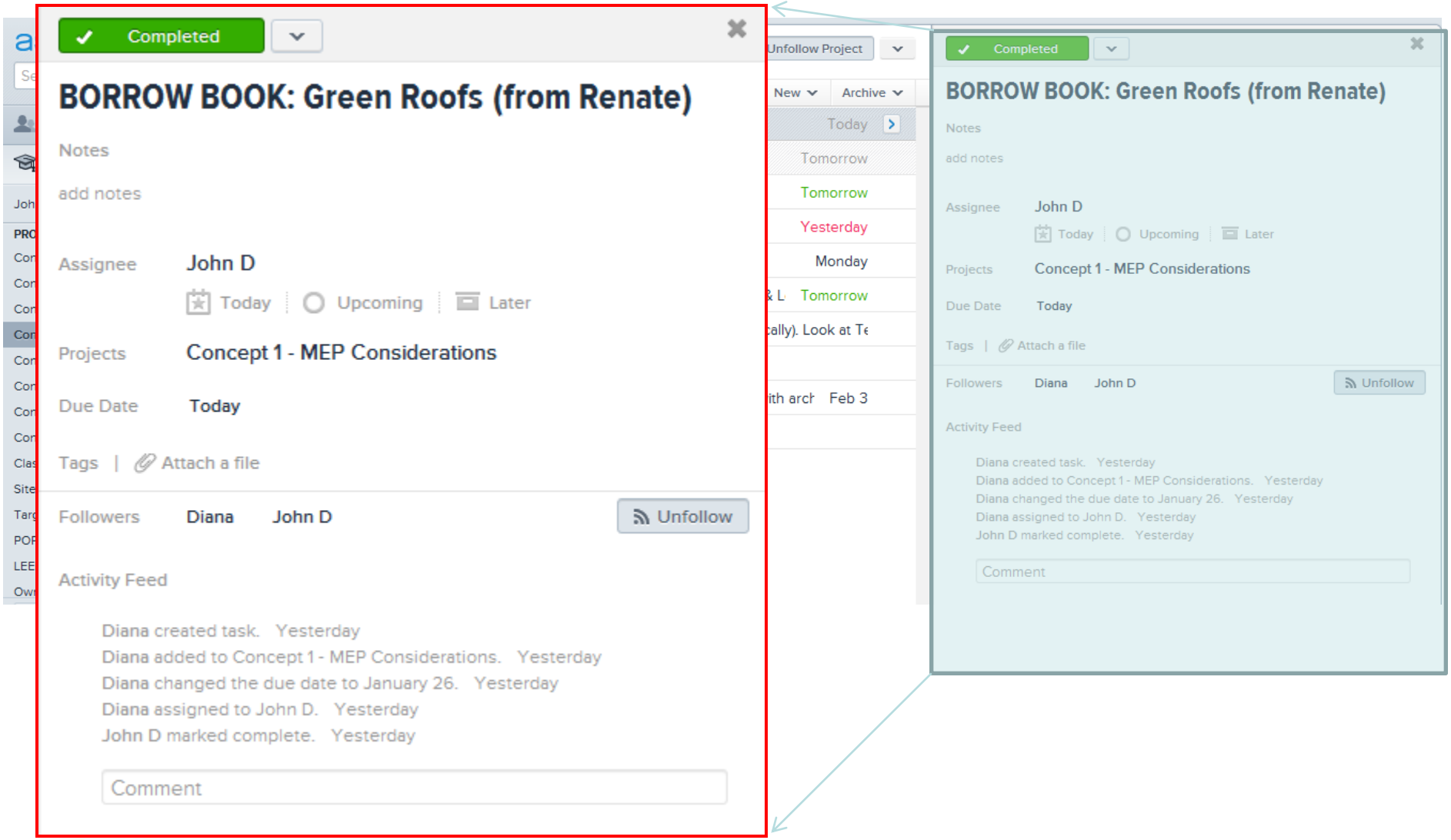

BIOMIMICRY WALL


The POP Zone!
Product, Organization, Process
PROCESS


The POP Zone!
Product, Organization, Process
PROCESS

THE POP ZONE!

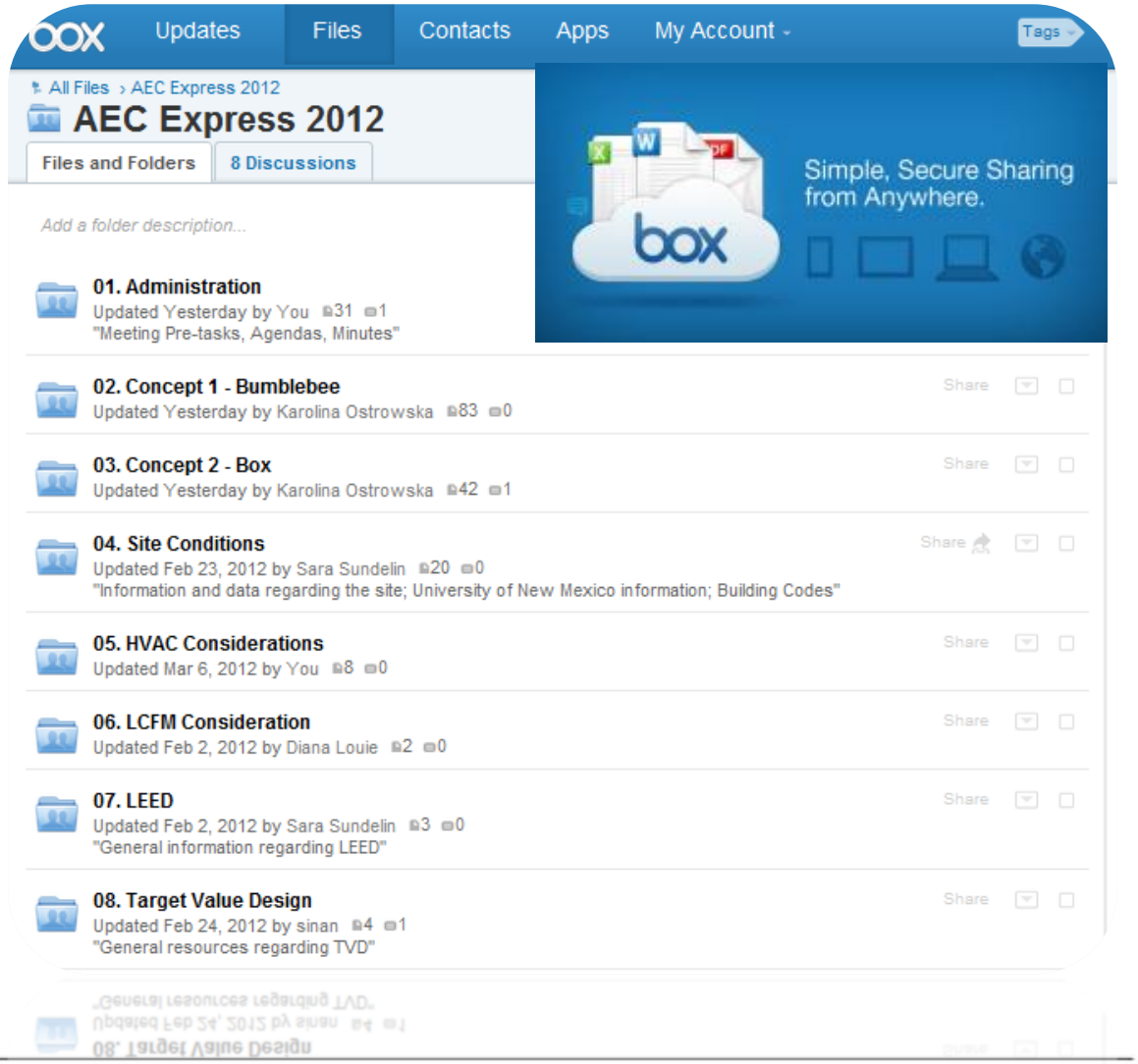
MEETINGS: WORK VS. PLAY BALANCE



TASK MANAGEMENT: ASANA.COM

Dropbox

Limited to Video Files



DOCUMENT SHARING & FEEDBACK

Karolina Ostrowska

Stereoscopic House by pencil office
The Stereoscopic House, pool on one side, ocean on the other. See more: http://ow.ly/9sPtP

The Stereoscopic House, pool on one side, ocean on the other. See more: http://ow.ly/9sPtP
By: Architizer

Like · Comment · Follow Post · March 5 at 11:08am

Diana Louie

Hoss Nasseri, Sinan Mihelčič: this is what Karolina had in mind for incorporating the "special wood cutout" idea. Using wooden shutters for the curtain walls, and even cutting out special designs on these shutters. What do you guys think?? Thanks!
http://worldarchitectur.blogfa.com/post-663.aspx

دنیای معماری WORLD ARCHITECTURE - BIOTECHNICAL FACULTY by Arhitektura Krušec
worldarchitectur.blogfa.com

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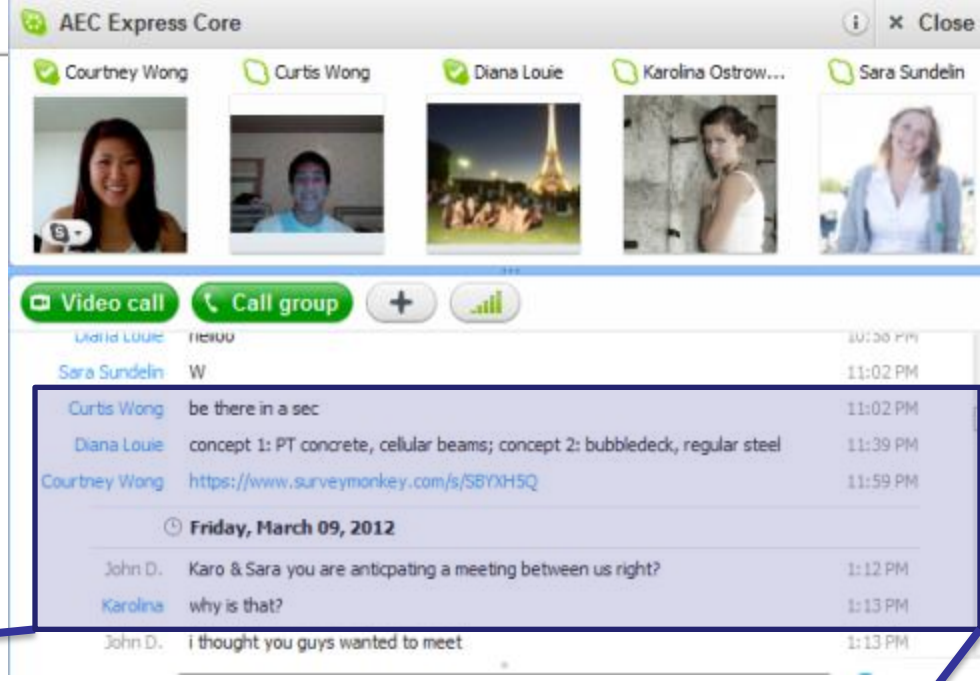
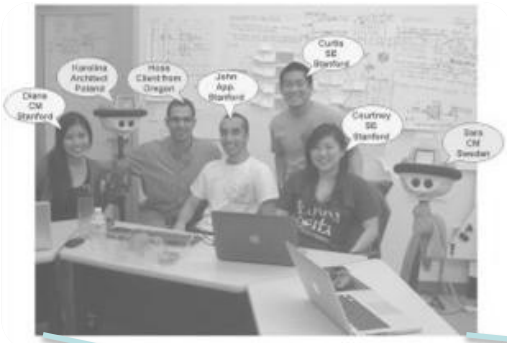
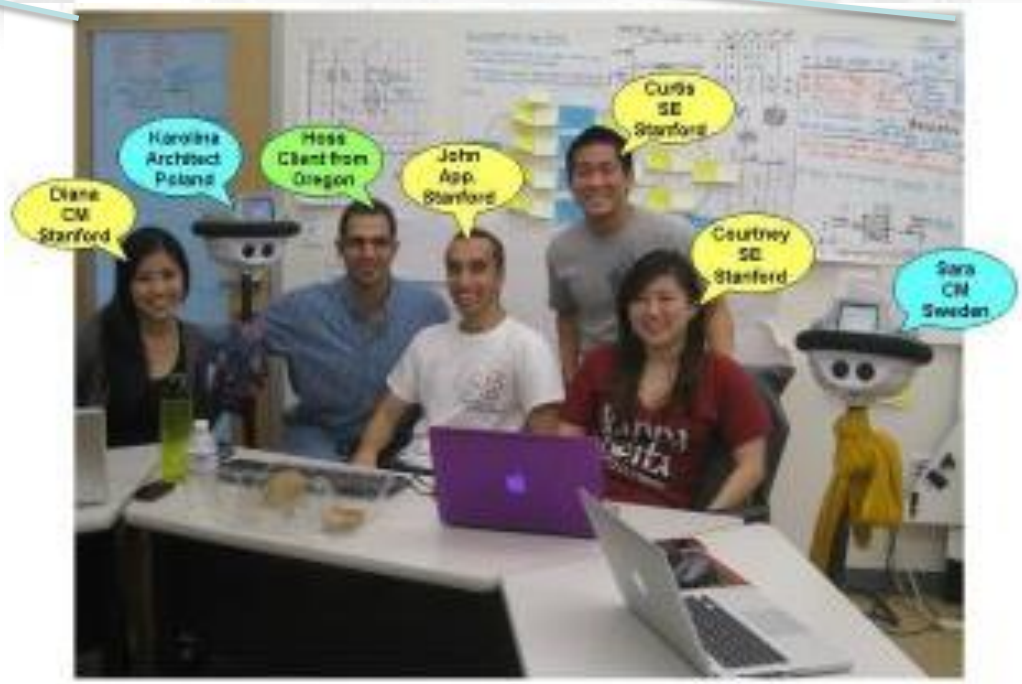


Curtis Wong	be there in a sec	11:02 PM
Diana Louie	concept 1: PT concrete, cellular beams; concept 2: bubbledeck, regular steel	11:39 PM
Courtney Wong	https://www.surveymonkey.com/s/SBYXH5Q	11:59 PM
	Friday, March 09, 2012	
John D.	Karo & Sara you are anticpating a meeting between us right?	1:12 PM
Karolina	why is that?	1:13 PM


Diane
CM
Stanford
Karolina
Architect
Poland
Hoss
Client from
Oregon
John
App.
Stanford
Curtis
SE
Stanford
Courtney
SE
Stanford
Sara
CM
Sweden


Concept 1 - Bumblebee


Diane
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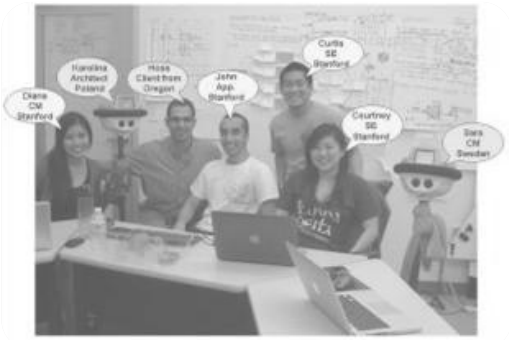
Stanford
Courtney
SE
Stanford
Sara
CM
Sweden

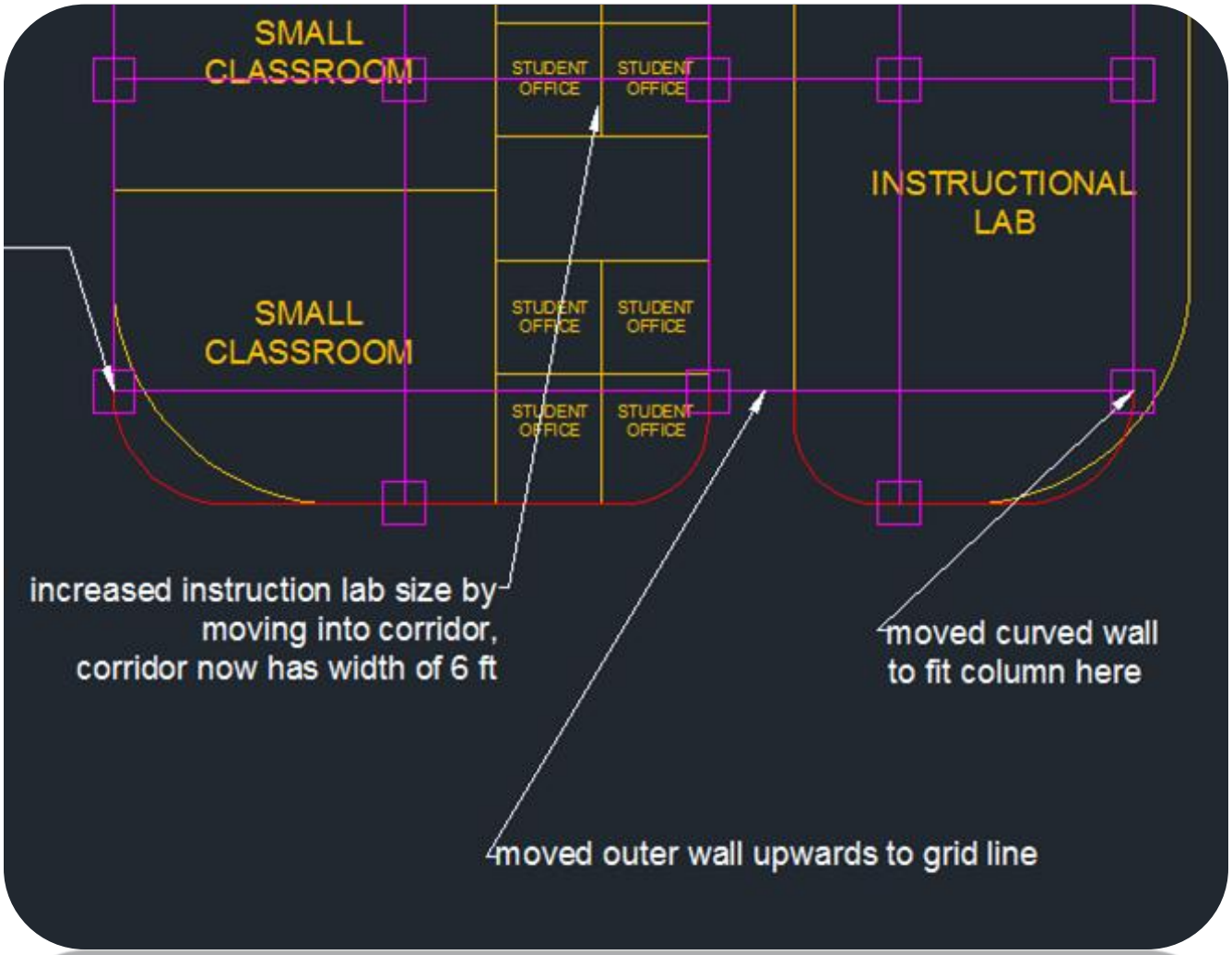

Concept 1 - Bumbleee


Concept 1 - Bumbleee



TUESDAY - INFORMAL MEETING
SUBGROUP MEETINGS


Sara
Young John
Curtis Wong
Courtney Wong
Diana Louie
Karolina C.
Working together
to formulate our
Decision Matrix
GoToMeeting
by CITRIX



A + E

Coordination

Collaboration

Communication

SUB-GROUP MEETINGS: GoToMeeting

DECISION MATRIX

DECISION MATRIX

	Parameters	Bumblebee		Box	
		Cellular beams	Post-tensioned	Regular steel	Bubble deck
Arch.	Design (interior) space	3	3	3	3
	Overall Aesthetics / Impression	3	3	2	2
	Effective Organization	2	2	3	3
Construction	Relation to Site	1	1	2	2
	Prefabrication	3	1	2	3
	Achievement of Milestones	3	1	2	3
	Constructability	2	1	3	3
	Local Materials Available	1	3	2	1
	Estimate Cost Compliance	1	1	2	3
Structural	MEP Installation / Compatibility	3	2	1	2
	Structural Cost	2	1	2	3
	Structural Aesthetics	3	1	2	1
General	Natural Ventilation	3	3	2	2
	Energy Efficiency	2	2	3	3
	Sustainability	2	3	2	3
	Biomimicry	3	2	2	3
	Overall Preference	3	1	1	2
	Team Score	94	75	85	102
	Combined Owner Score	96	88	81	82
	Total Overall Score	**95**	**84**	**82**	**89**

WINNER!

TERMITE ENTERPRISE

CELLULAR BEAMS

INVERTED MOUND

THANKS TO:

- Owners
  - Hoss Nasseri
  - Sinan Mihelçiç
- Suppliers
  - Chris Varner – New Millennium Building Systems
- Mentors
  - Eduaurdo Miranda
  - Kyle Adams
  - Justin Bocian
  - Nick Arenson
  - Forest Peterson
  - Willem Kymmel
- Course Leaders
  - Renate Fruchter
  - Derek Ouyang
  - Riam Firouz
  - Michael Seaman

The Express Bunch