Committee on Architecture for Education 2013 Educational Facility Design Awards

2013-2014 CAE Conferences and Events

- November 7-9 2013, CAE Fall Conference, San Francisco, CA
- April or May 2014, CAE Spring Conference
- June 26, 2014, CAE Reception at the AIA Convention
- October 29-31, 2014, CAE Fall Conference

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Knowledge Communities
Email: knowledgecommunities@aia.org

Handout and Q&A Session

- **Handout:** Download the handout at:

http://network.aia.org/CommitteeonArchitectureforEducation/Home/WebinarResources/

- This webinar is eligible for 1.5 AIA LUs.
- **Survey:** The survey link will be provided at the end of the webinar.
- **Questions?** Submit a question to the moderator via the chat box. Questions will be answered as time allows.

Learning Objectives

- Identify and analyze the key educational attributes shaping the design of educational facilities.
- Compare concepts and evaluate them in the context of real-world examples recognized as exemplary learning environments.
- Identify and evaluate salient features of the built environments that are emerging in educational facility design that promote engagement among learners.
- Describe how sustainability and environmental awareness is shaping educational facility design as a regional response as well as provide examples that showcase these features.

Steven M. Shiver, AIA, LEED AP
NAC|Architecture, Jury Chair

John R. Dale, FAIA
Harley Ellis Devereaux

Linda Nelson Keane, AIA
Studio 1032

Victor Sidy, AIA
Taliesin School of Architecture

C. Kenneth Tanner
University of Georgia

Dr. Claire Gallagher, Assoc. AIA
Georgian Court University
(2014 Jury)

Award Criteria

- Educational facilities that serve as an example of a superb place in which to learn, further the client's mission, goals and educational program while demonstrating excellence in architectural design.
- Demonstrated quality of form, functionality, and architectural responses that promote learning for people of all age groups through:
  - The use of natural light throughout
  - Increased outdoor socializing and learning spaces
  - Community collaboration throughout the design process
  - Environmentally connected and energy responsive use of water collection, filtration, green roofs, roof terraces, and sun shading techniques.
- Function and surrounding regional and community context are valued as part of the planning and design process.
- Connection to the site, surrounding campus, community, and environment.

California State University
Northridge Student Recreation Center

Northridge, California

LPA, Incorporated

Entry data

Category	**1. Architecture - e. Institutional/Educational**
Type	Univeristy Student Recreation Center
Location	Los Angeles County, CA
Size	133,000 sf
Budget	45.5 million
LEED	Gold

Introduction

The three-story building serves a student population of 36,000 with an average of 6,000 daily visits.

The program includes fitness areas, three-court gym, multi-activity court, running track, climbing wall, racquetball, multi-purpose studios, administration, lockers and a pool.

The linear massing defines a new campus edge to the adjacent neighborhood and establishes a sense of arrival to the end of the main pedestrian axis on campus.

The east façade becomes a “human billboard” that advertises the activities within to the community.

East facade (community side)

Context

Located in a coastal valley within Los Angeles County, the area has a dry and sunny climate throughout the year with mild winters and high temperatures in the summer months.

The site was a narrow lot on the east edge of campus, at the end of the main pedestrian crossway. The play fields (currently under construction) will create a transitional zone between the residential street and the building.

Campus side / Entry portal

Community side / "Human billboard"

Site of future play fields

500'

Commercial | Campus | Community

The “Fold”

Structural framing for the “fold” under construction

Design challenge

The challenge was to accommodate the extensive program on the long and narrow site while addressing its poor solar orientation and urban edge condition.

Solution

The design solution engaged the transitional nature of the site (between campus and residential) by creating a “fold” that responds effectively to both climate and surrounding context: Sun-protected and accessible to the campus (west), open, revealing and dynamic to the surrounding community.

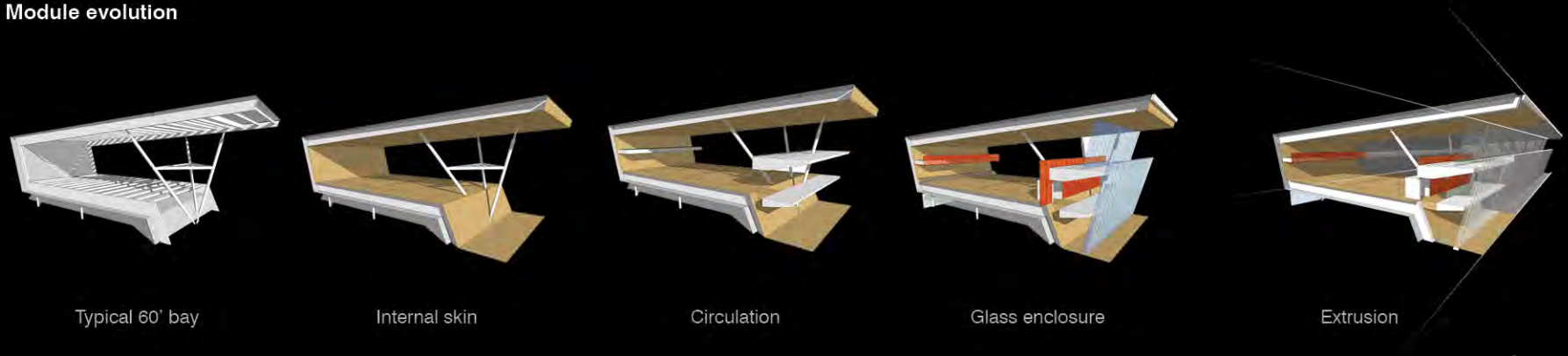
The building delineates a new campus edge to the community while establishing a terminus to the campus main pedestrian axis.

Utilizing this unique position, the east façade is comprised primarily of glass, creating a “human billboard” that reveals the activities within to the community as a direct response to the client’s request to use the building as a recruiting tool.

The integrated collaboration of the different disciplines involved in formed the design and, literally, gave form to the building. The result was the use of a repetitive module that incorporates structural, mechanical, and electrical solutions to enhance the buildings’ performance.

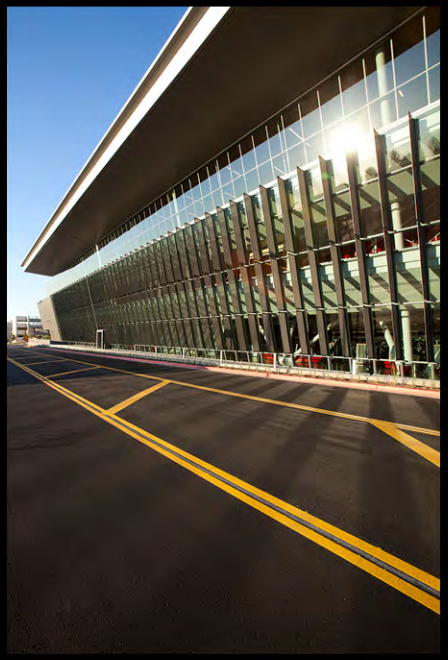
The profile of the building enables numerous sustainable design features like displacement ventilation, natural daylighting, efficient stacking of spaces and solar control.

Module evolution



Typical 60’ bay | Internal skin | Circulation | Glass enclosure | Extrusion

Southeast corner



East facade

West-side promenade

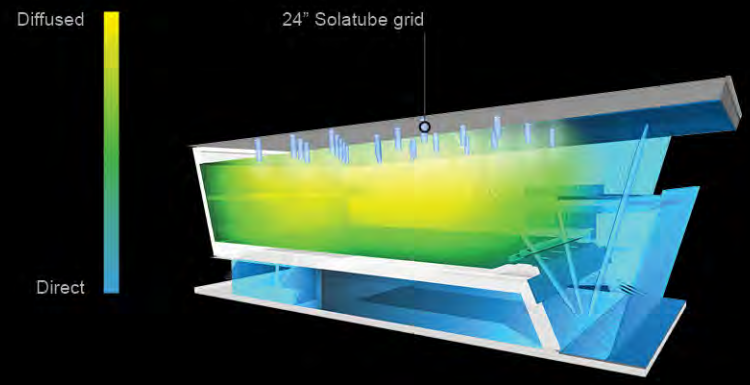
Informed design

Much like in the industrial design world (an aircraft fuselage, for example), and given the linear nature of the building, the cross section studies became the key to successfully integrating architecture, interior design, structure and supporting systems.

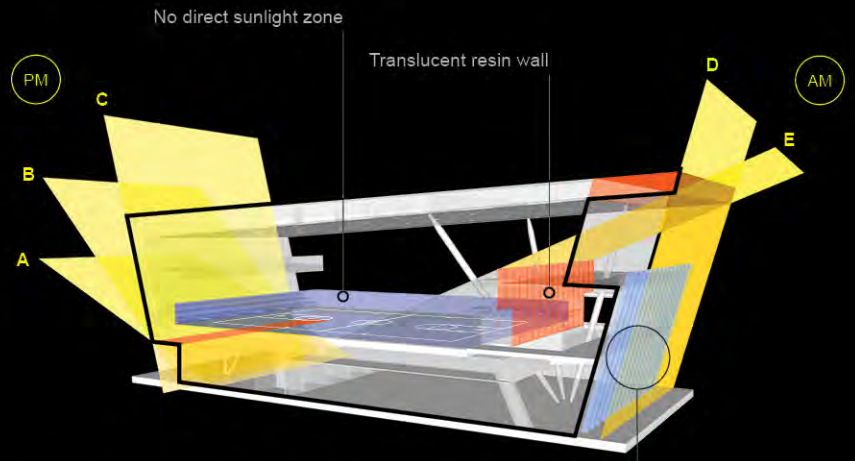
The width of collegiate basketball court determined the optimum size of the structural module (60').

This typical bay was the prototype used by the multi-disciplinary team to determine the optimal shape. The result of this layered approach was the creation of a cross-section profile that addresses multiple factors at once (context, views, circulation, ventilation, lighting, etc.) This slice was then repeated (extruded) for the length of the building to complete the final form.

Natural Light



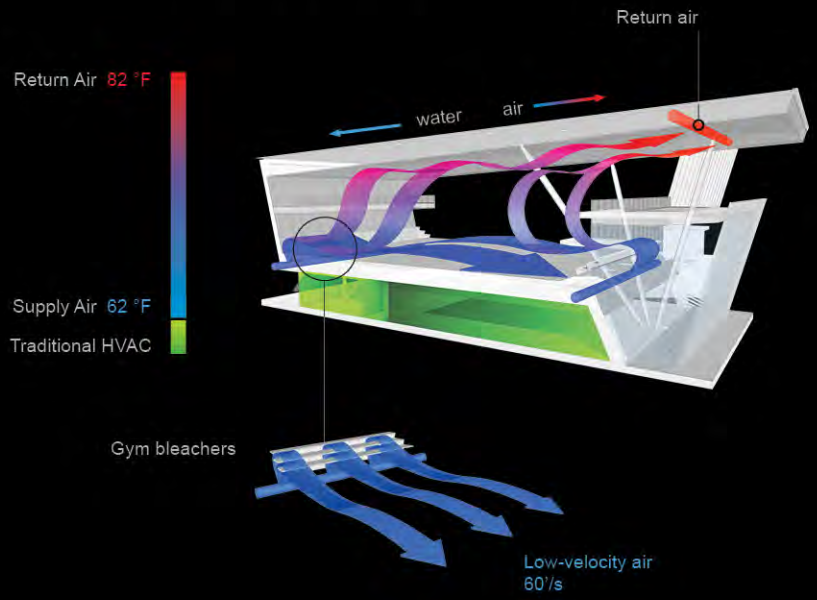
Sunlight Control



Fin Sunshade Coverage

A	Summer Solstice	07:00 pm
B	Summer Solstice	03:00 pm
C	Summer Solstice	01:00 pm
D	Winter Solstice	12:00 pm
E	Winter Solstice	09:00 am

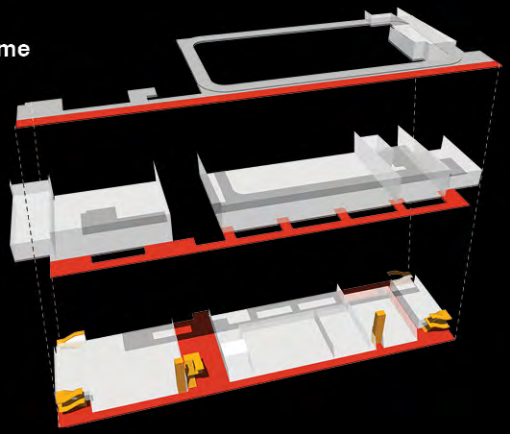
Displacement Ventilation System



Reception and control desk

Lobby and running track

Circulation scheme



Level 3

Level 2

Level 1

Social space

Recreation

Support

Social Space

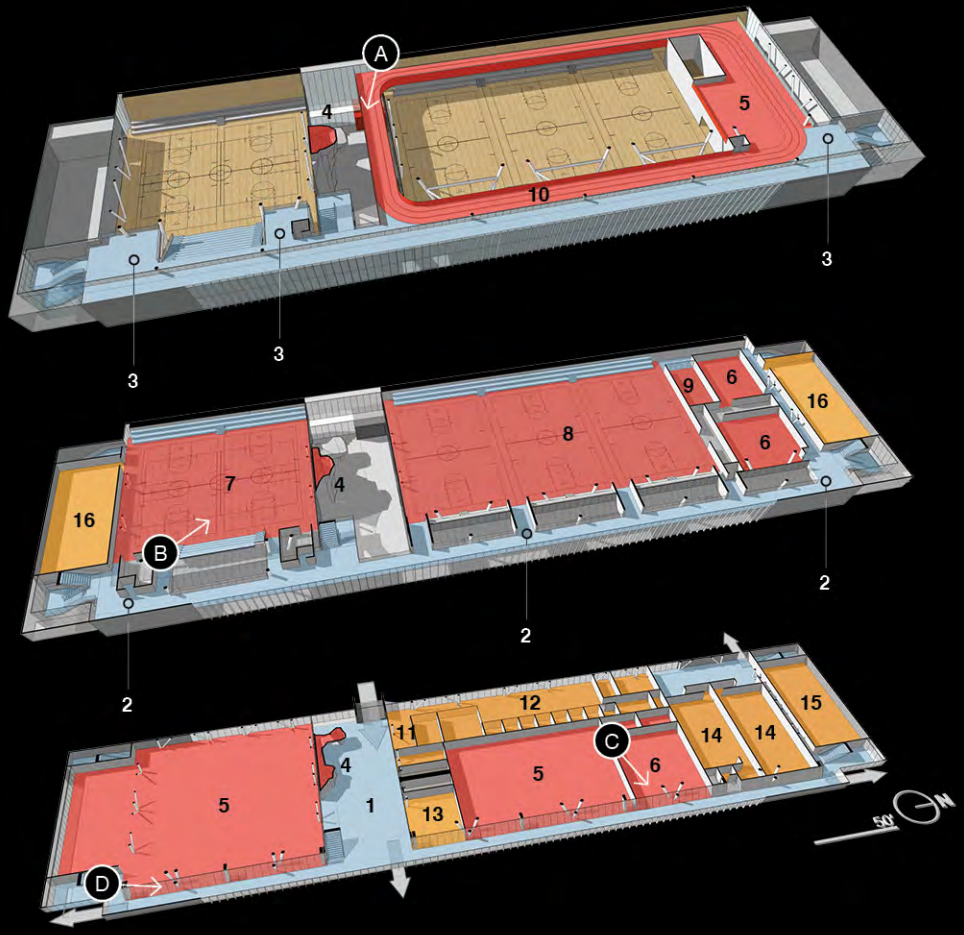
1 Lobby
2 Skydeck
3 Lounge

Recreation

4 Climbing wall
5 Fitness
6 Studio
7 Multi-activity court
8 Three-court gym
9 Racquetball
10 Running track

Support

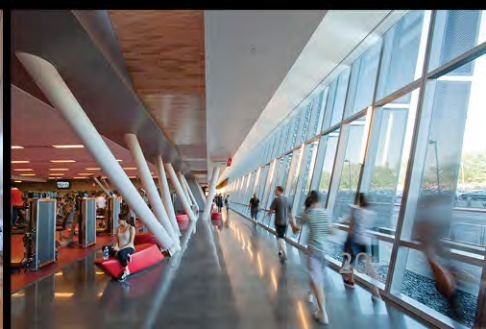
11 Check-in desk
12 Administration
13 Team room
14 Lockers
15 Storage / Support
16 Mechanical well



B

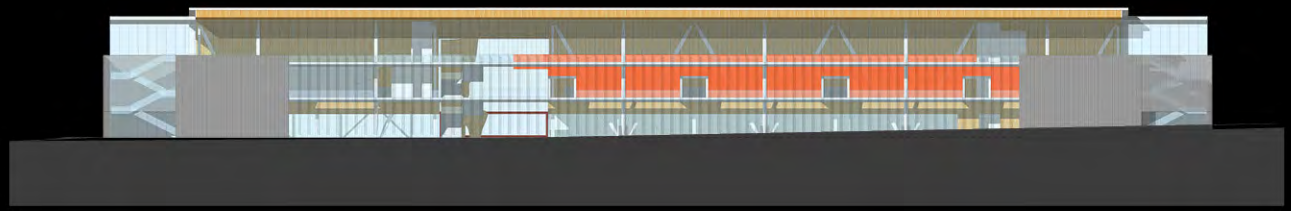
C

D

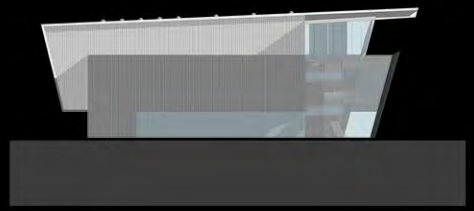


Second floor “Skydeck” level

Three-court gym and running track above

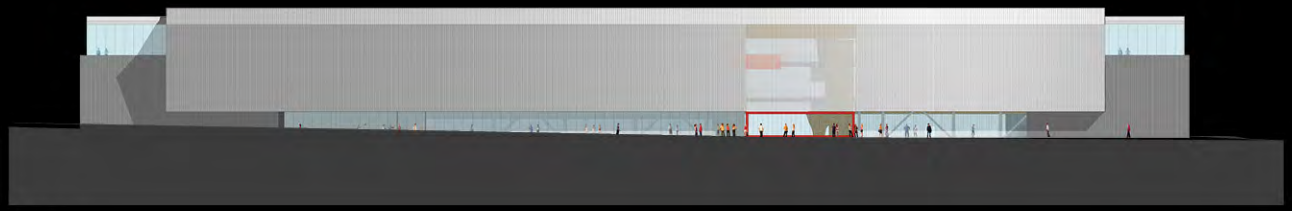


East



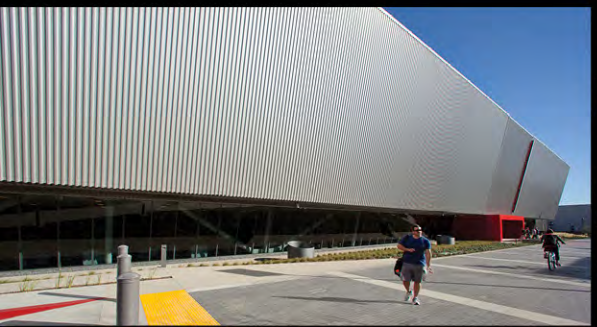
South

North



West

Corrugated metal skin

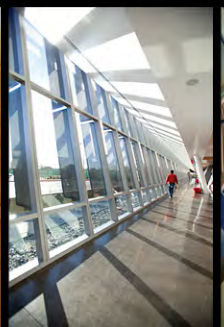


Rainwater collection

Entry portal

Gym portal

East-side glazing



Perf aluminum fins

Lobby and MAC court

West-facing entry portal and lobby veil

West elevation and pool deck access

Sandy High School

Sandy, Oregon

DOWA-IBI Group


SANDY HIGH SCHOOL

JUNE 2010

AUGUST 2012

AREA OF DEVELOPMENT

EXISTING FIELDS

PRESERVED OLD GROWTH HABITAT
OUTDOOR LEARNING LAB

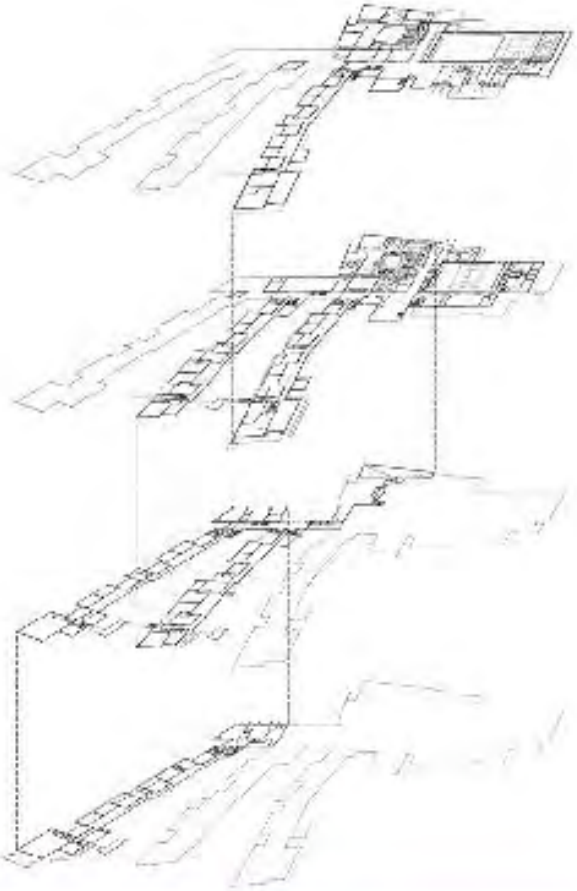
MAIN ENTRY LEVEL

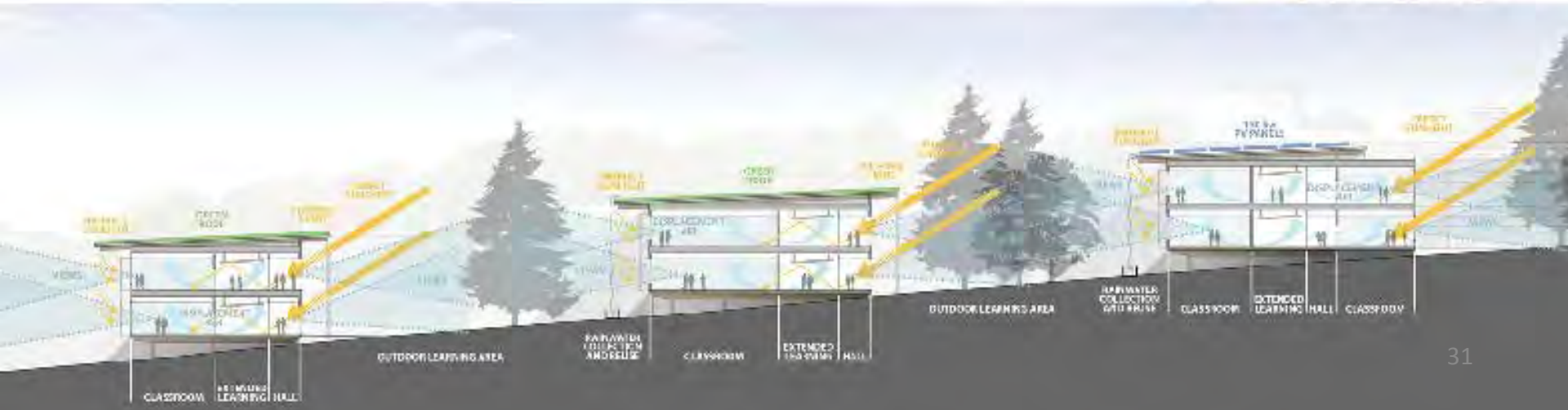
UPPER LEVEL

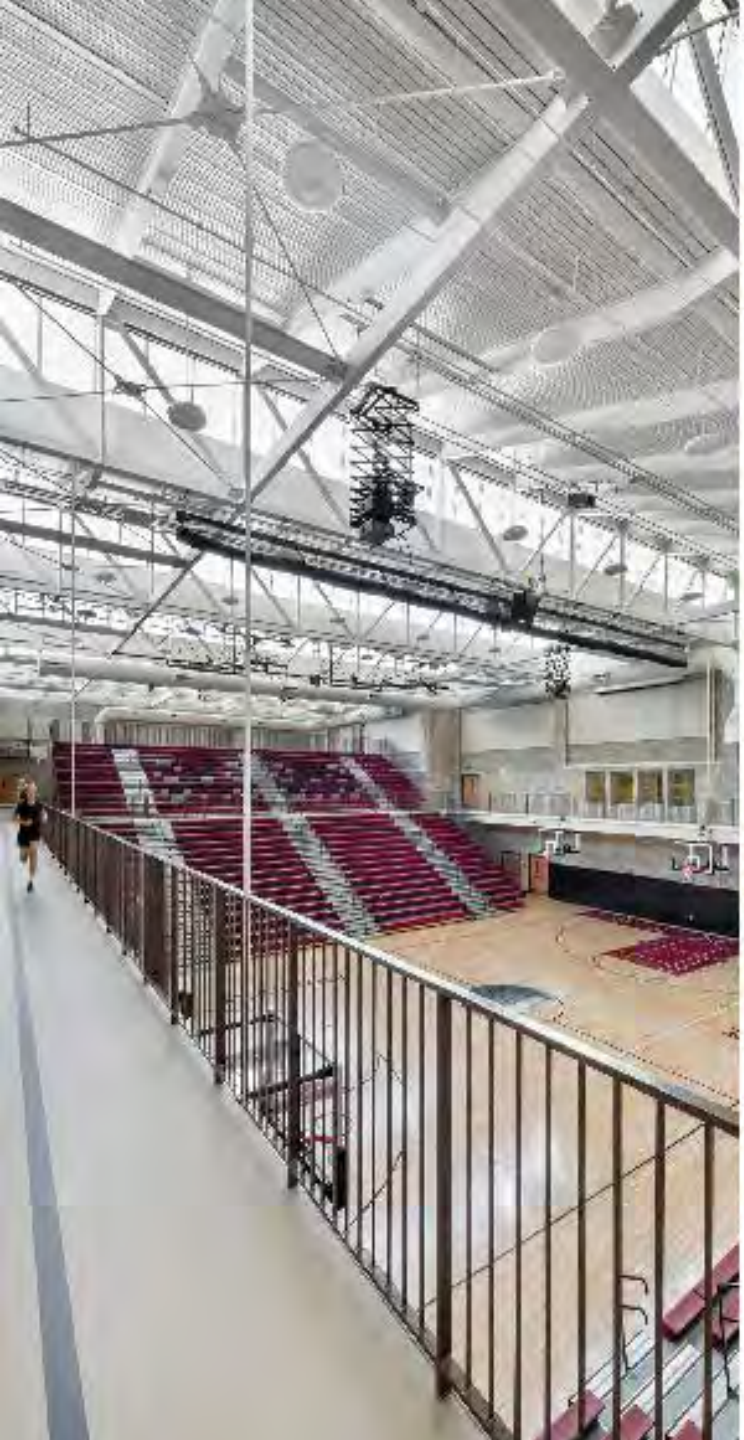
LOWER LEVEL 2

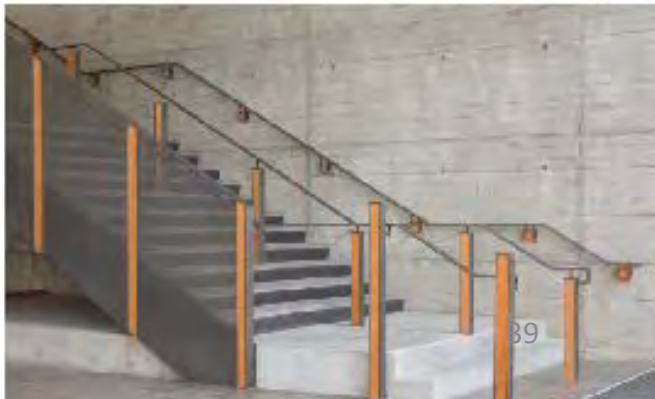
LOWER LEVEL 1

1 CTE - Communication/ Transportation
2 Learning Cabin
3 Teacher Collaboration
4 Fine Arts
5 Library/Media Center
6 Science Cabin
7 CTE - Natural Resources
8 Rainwater storage
9 CTE - Energy/Design
10 Black Box Theater
11 Commons
12 Career/Counseling
13 Auditorium
14 Band
15 Choir
16 Administration
17 Main Gym
18 Aerobics
19 Weights
20 Locker/Training
21 Lecture Hall
22 Running Track
23 Auxiliary Gym
24 Wrestling
25 Health Clinic
26 Services, Kitchen, IT
27 Green Roof
28 Geothermal Loop


UPPER LEVEL
MAIN ENTRY LEVEL
LOWER LEVEL 1
LOWER LEVEL 2


CLASSROOM
OUTDOOR LEARNING AREA
CLASSROOM
OUTDOOR LEARNING AREA
CLASSROOM
HALL
CLASSROOM





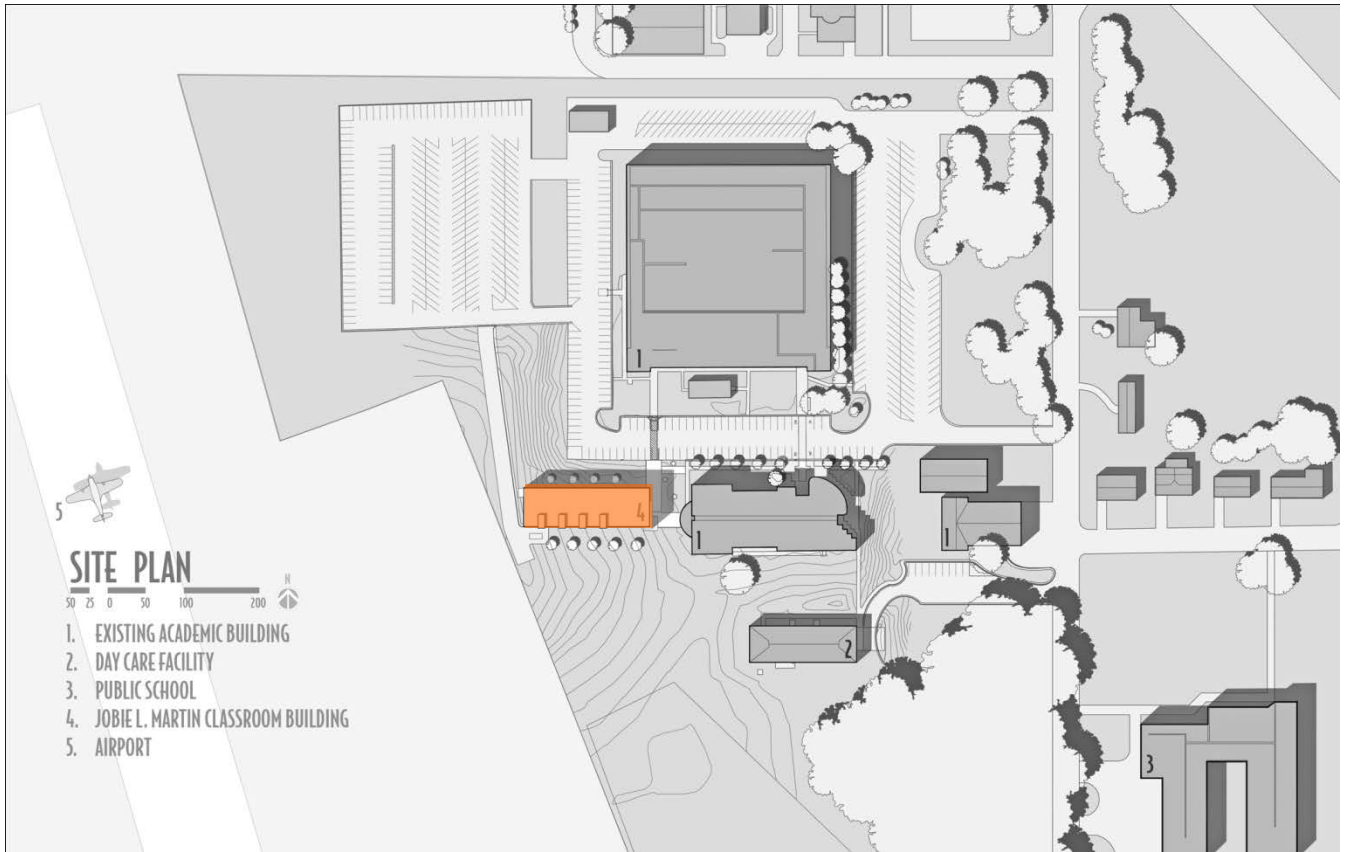
Jobie L. Martin Classroom Building

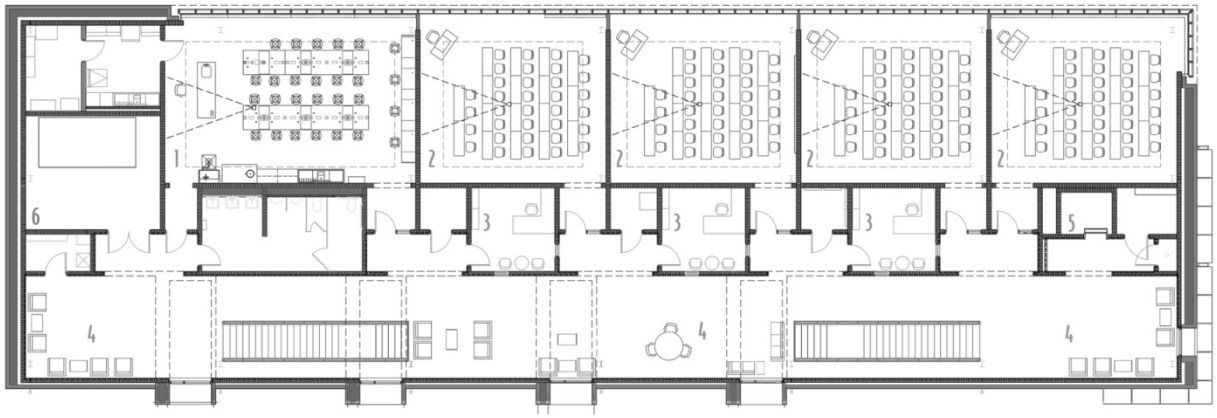
Jackson, Mississippi

Duvall Decker


JOBIE L. MARTIN

S

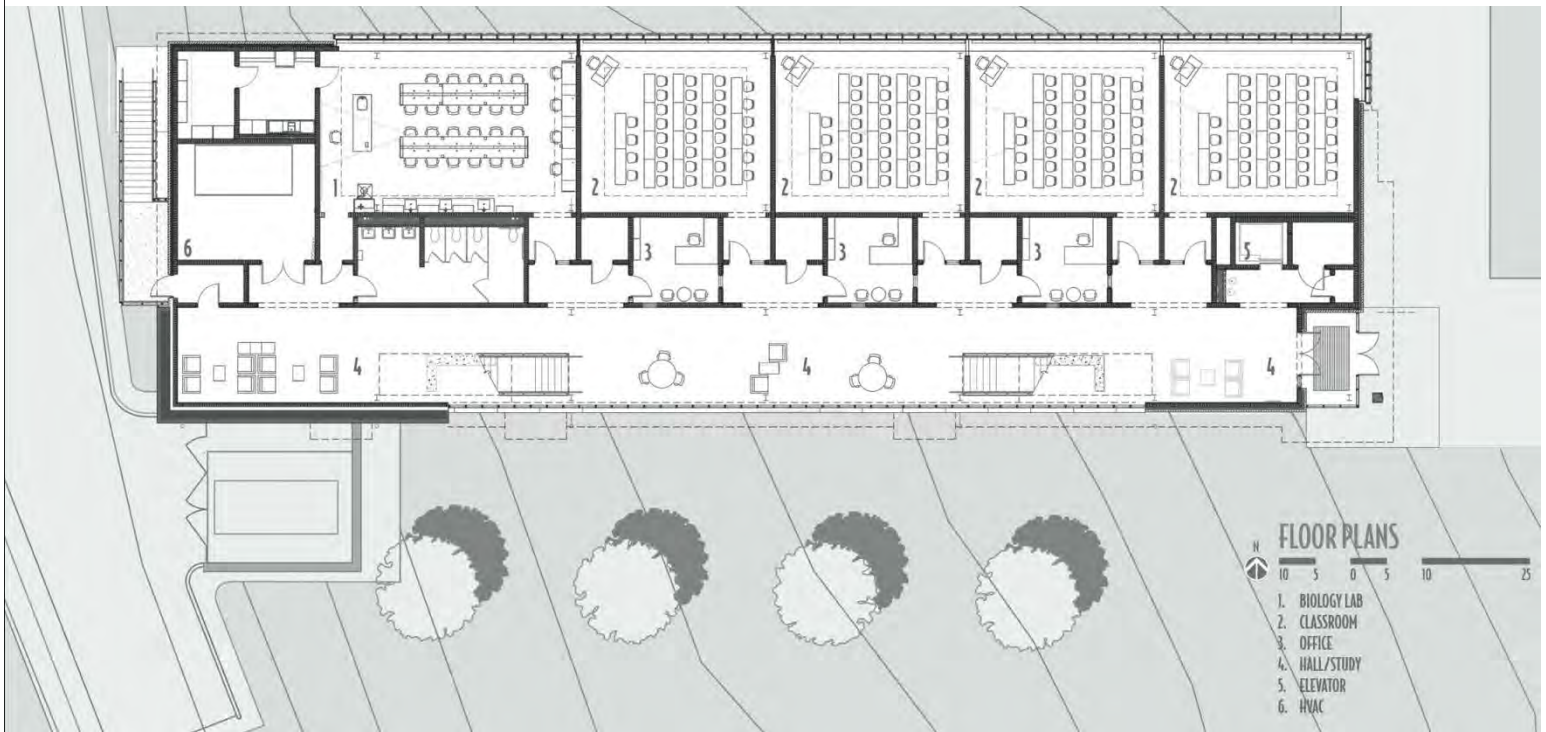

SITE PLAN
50 25 0 50 100 200
N
1. EXISTING ACADEMIC BUILDING
2. DAY CARE FACILITY
3. PUBLIC SCHOOL
4. JOBIE L. MARTIN CLASSROOM BUILDING
5. AIRPORT



SECOND FLOOR PLAN

10 5 0 5 10 25

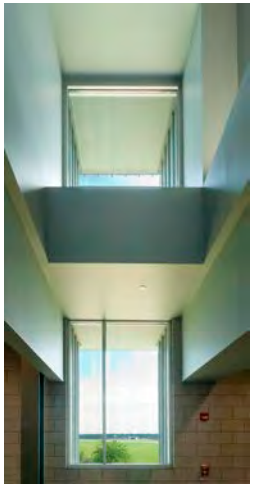
1. CHEMISTRY LAB
2. CLASSROOM
3. OFFICE
4. HALL/STUDY
5. ELEVATOR
6. HVAC

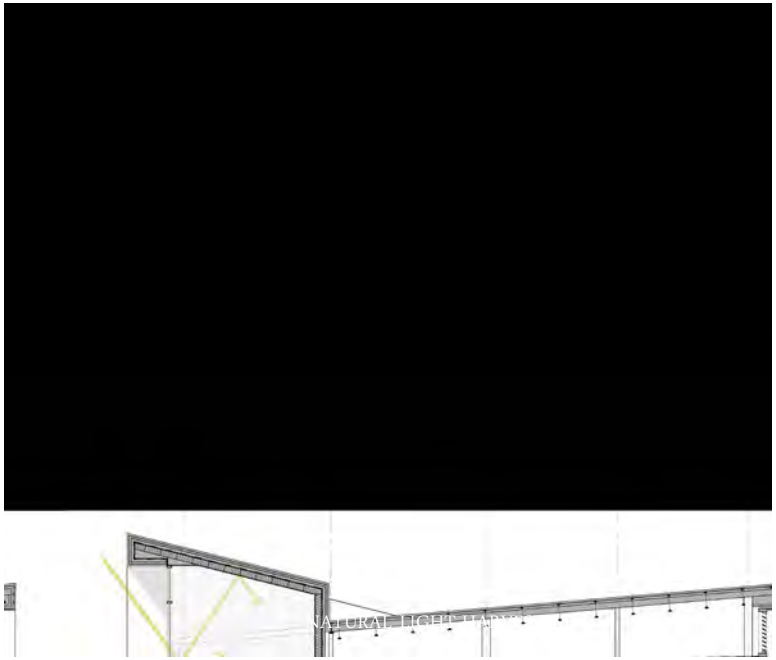


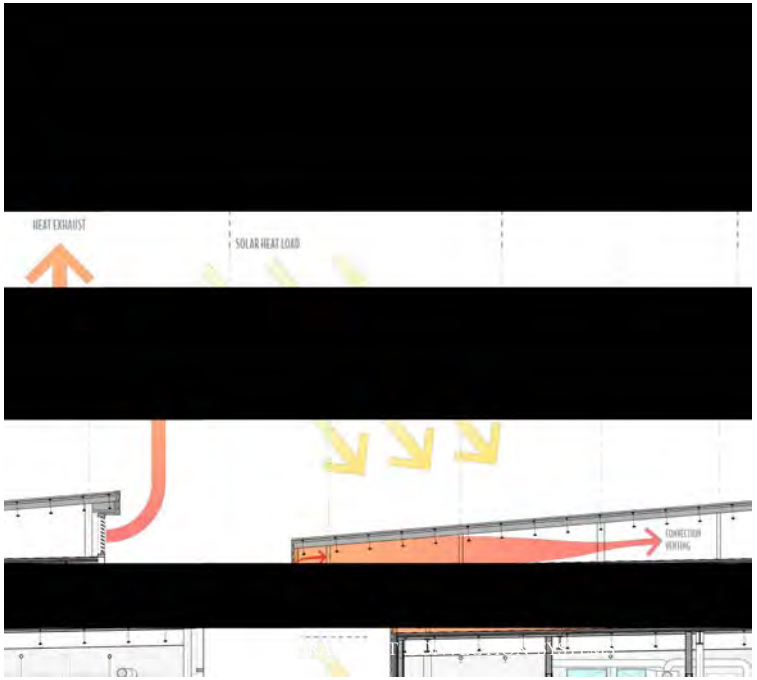
FLOOR PLANS

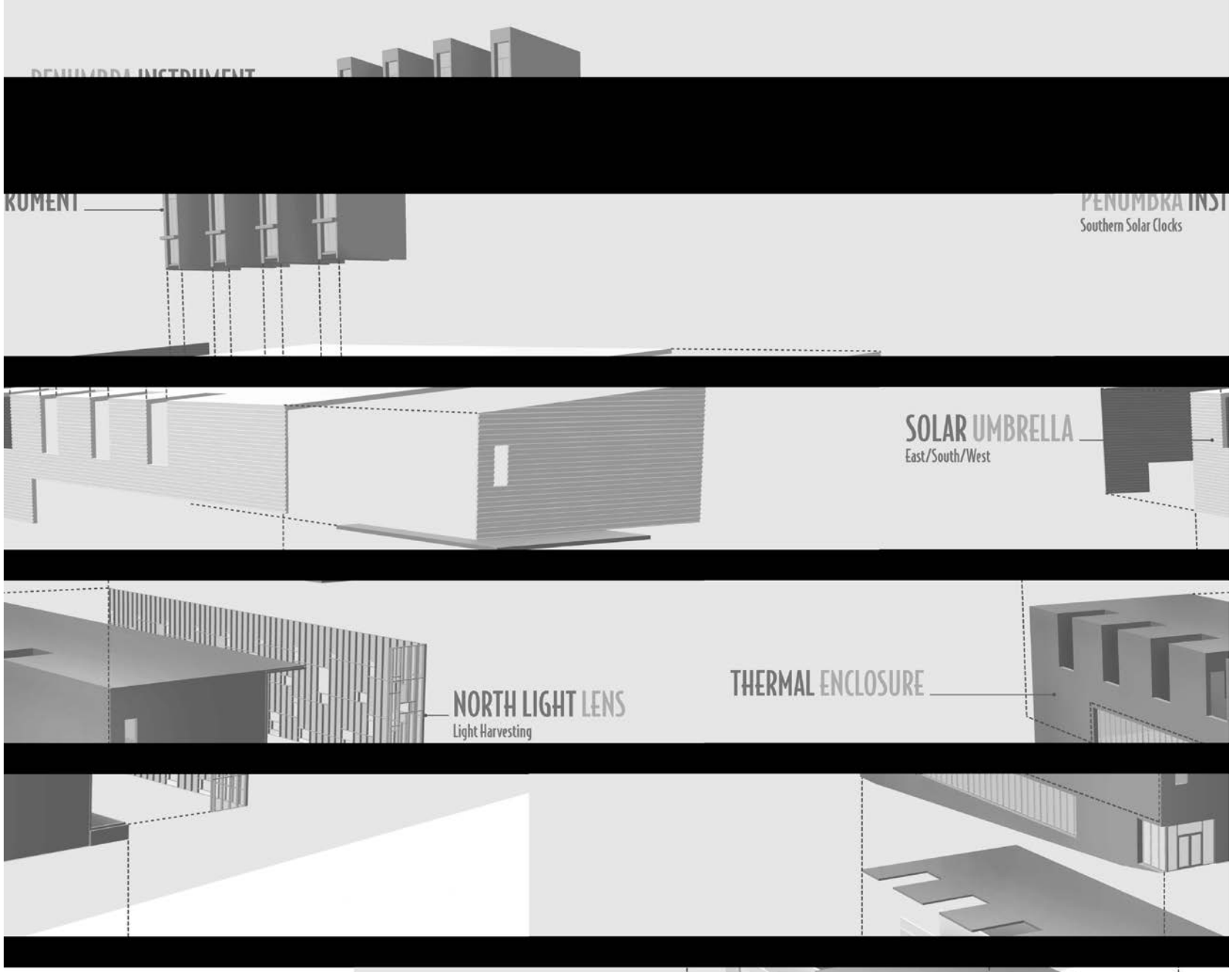
10 5 0 5 10 25

1. BIOLOGY LAB
2. CLASSROOM
3. OFFICE
4. HALL/STUDY
5. ELEVATOR
6. HVAC






HEAT EXHAUST
SOLAR HEAT LOAD


PENUMBRA INSTRUMENT
Southern Solar Clocks
SOLAR UMBRELLA
East/South/West
NORTH LIGHT LENS
Light Harvesting
THERMAL ENCLOSURE
LOUNGE/CIRCULATION
OFFICE/CORE

Mesa Community College Health Wellness Building

Mesa, Arizona

SmithGroupJJR

Health/Wellness Building Renovation

At

Mesa Community College

Location – Mesa, AZ

Building Area –42,000 GSF

$4.9 Million

SMITHGROUP JJR

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EXISTING CONDITION

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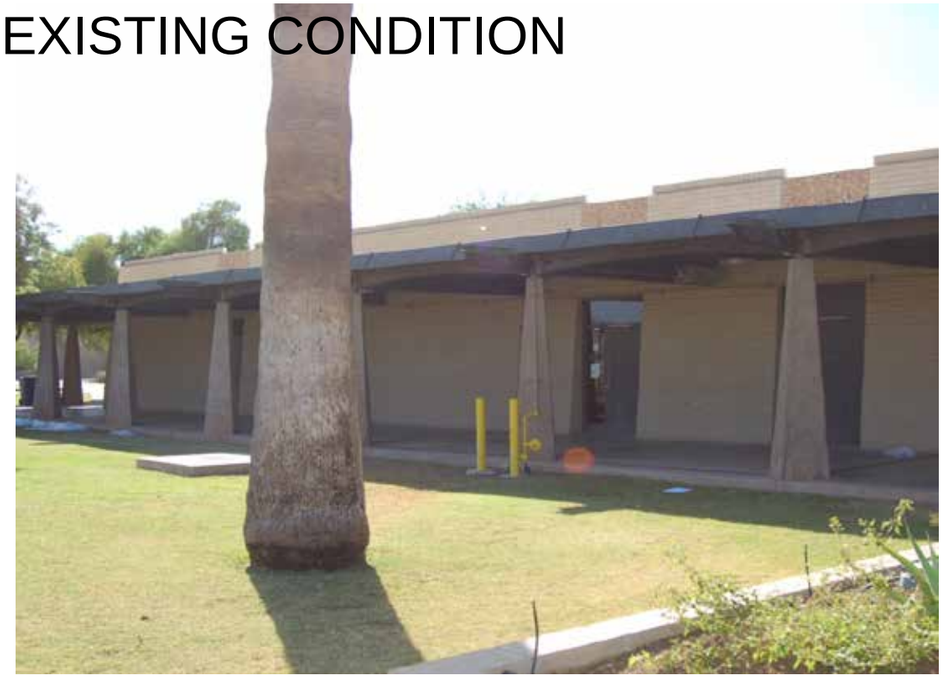

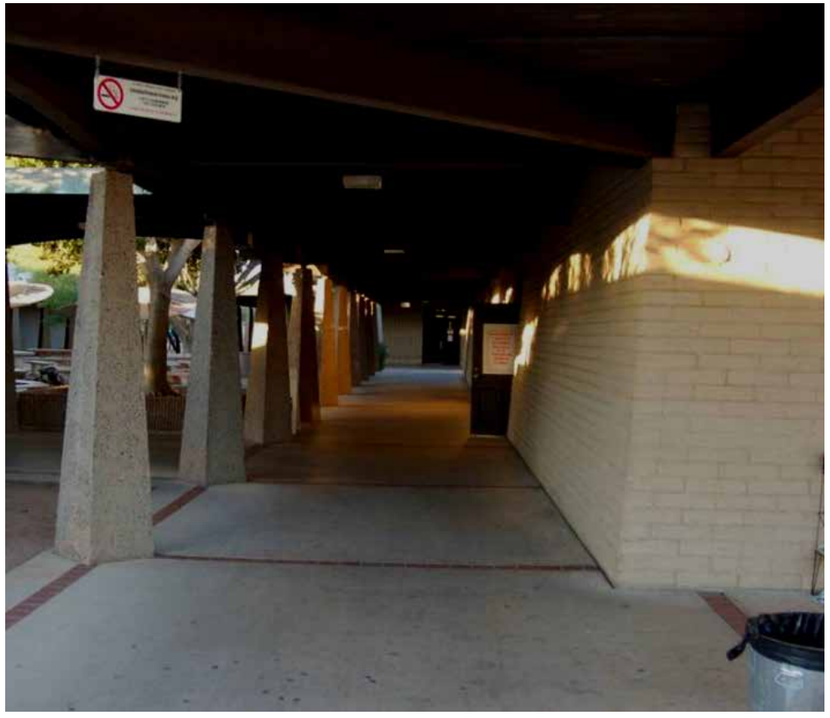

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PROGRAM ELEMENTS

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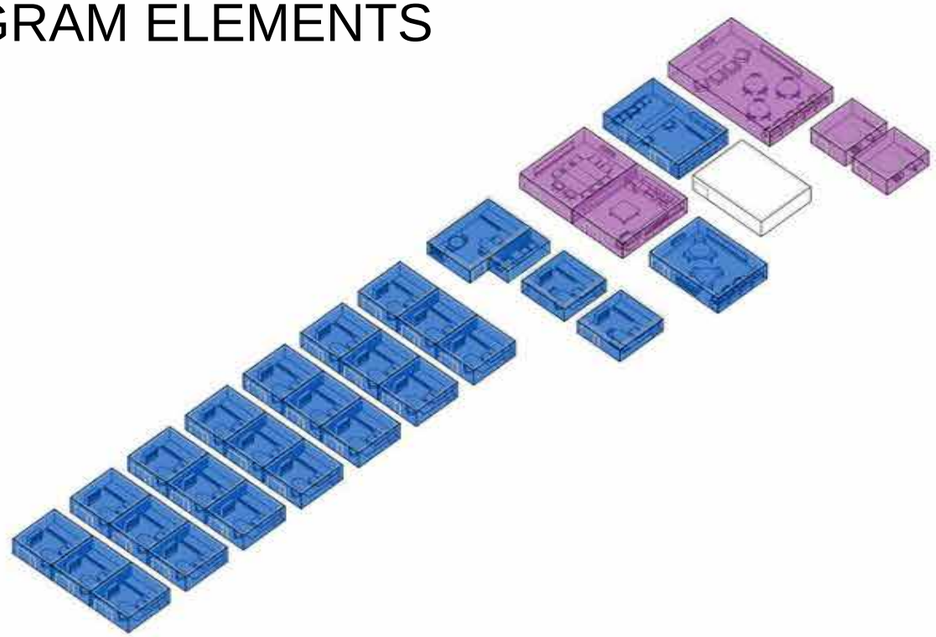
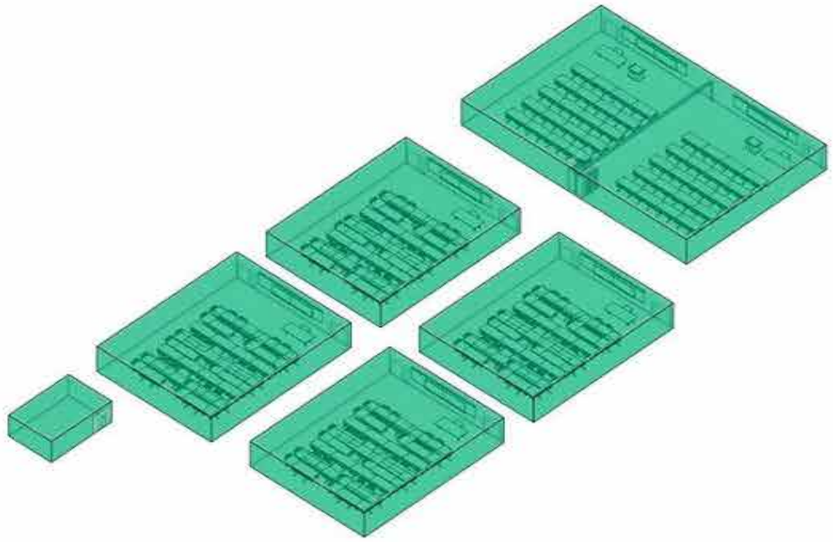
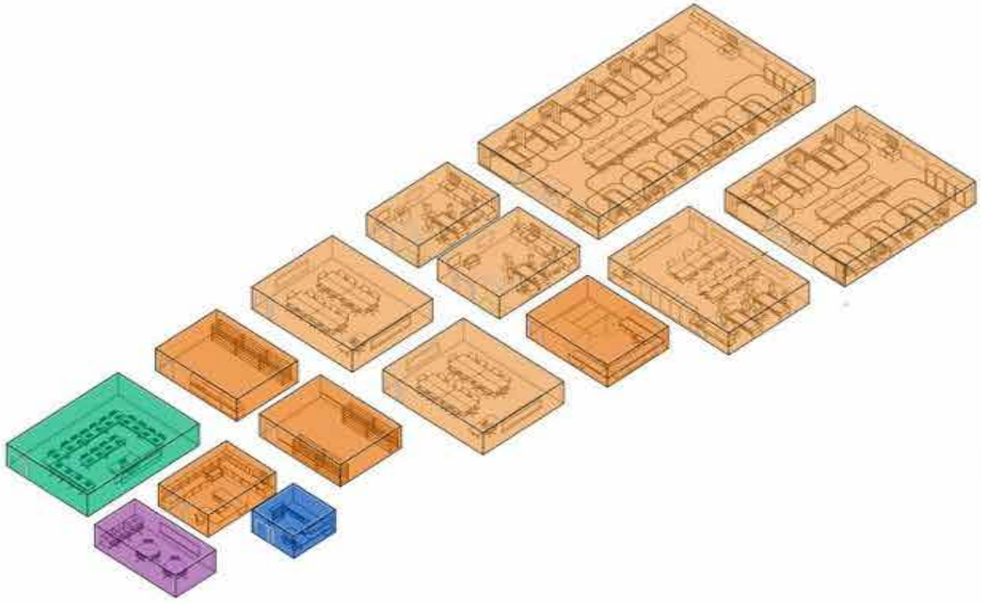


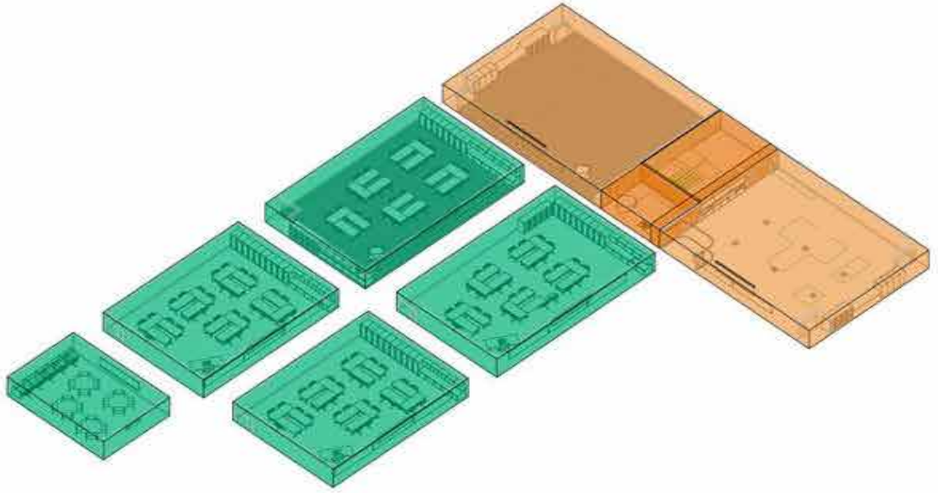
NURSING GENERAL SPACE



NURSING CLASSROOM SPACE



NURSING LAB SPACE



EXERCISE SCIENCE

AIA

23,425 NSF

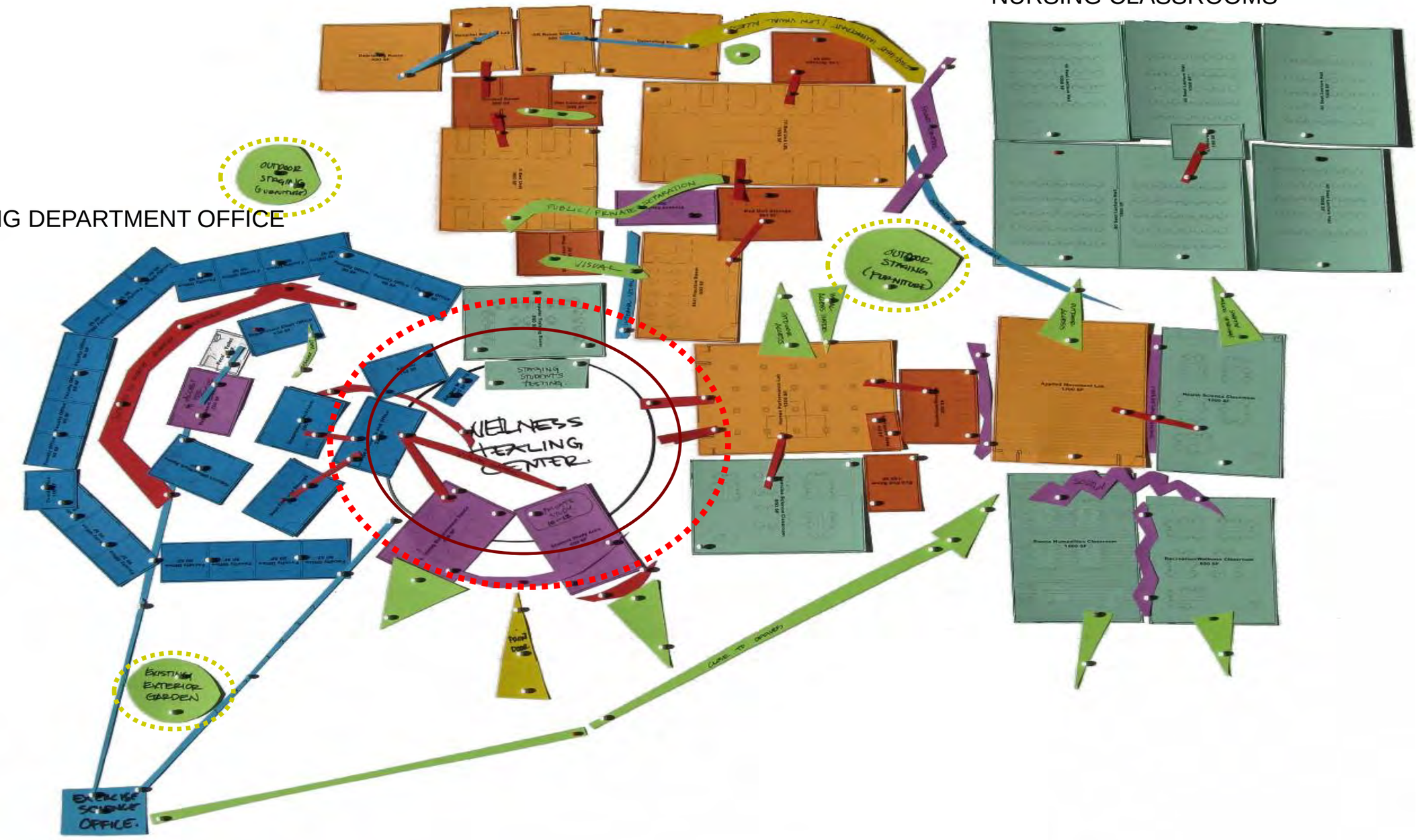
‘PERFECT DIAGRAM’

SMITHGROUP JJR

NURSING LABS

NURSING CLASSROOMS

NURSING DEPARTMENT OFFICE



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EXERCISE SCIENCE DEPARTMENT OFFICE

ORIGINAL FLOOR PLAN

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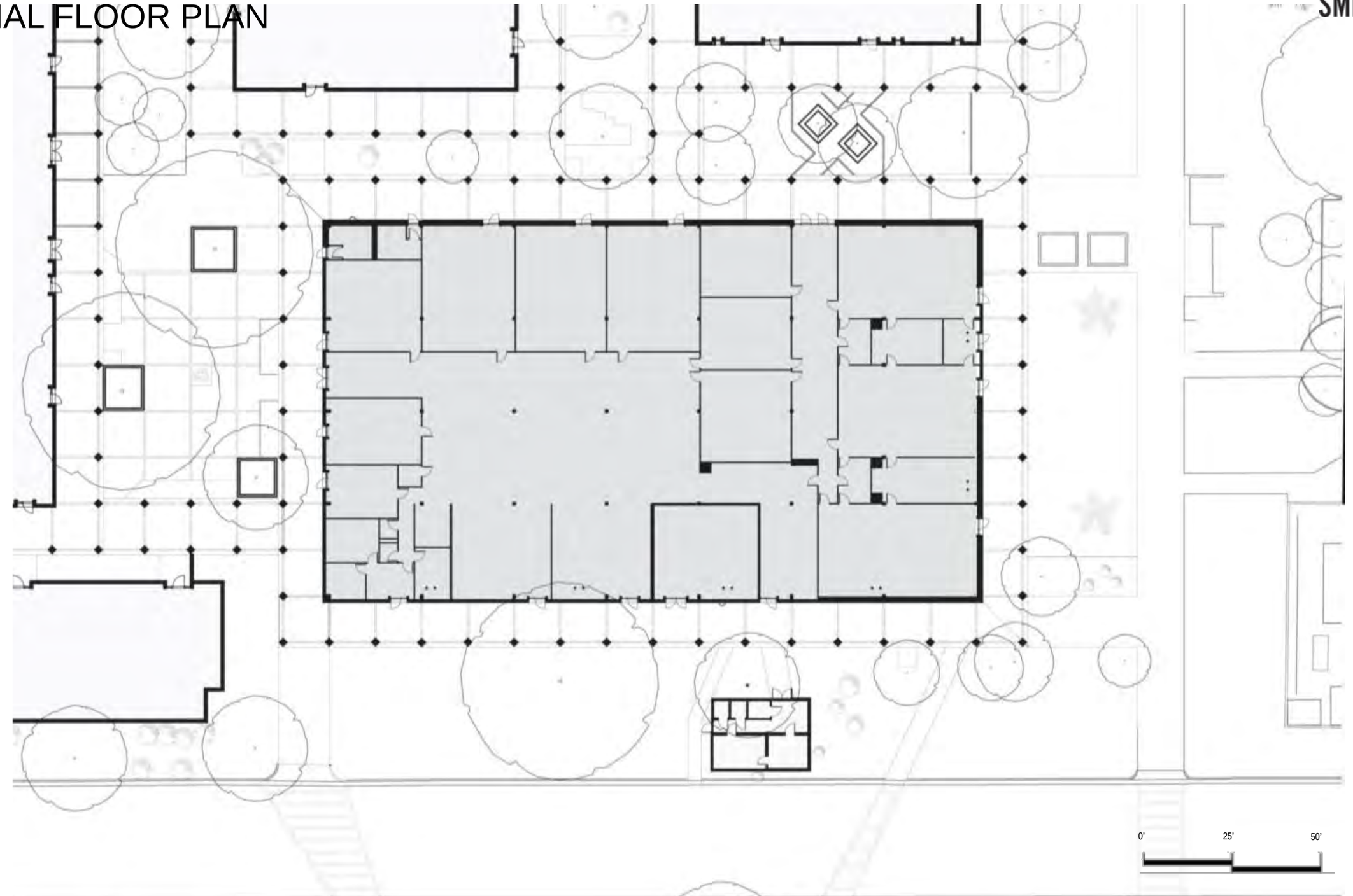

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CONCEPT DIAGRAM

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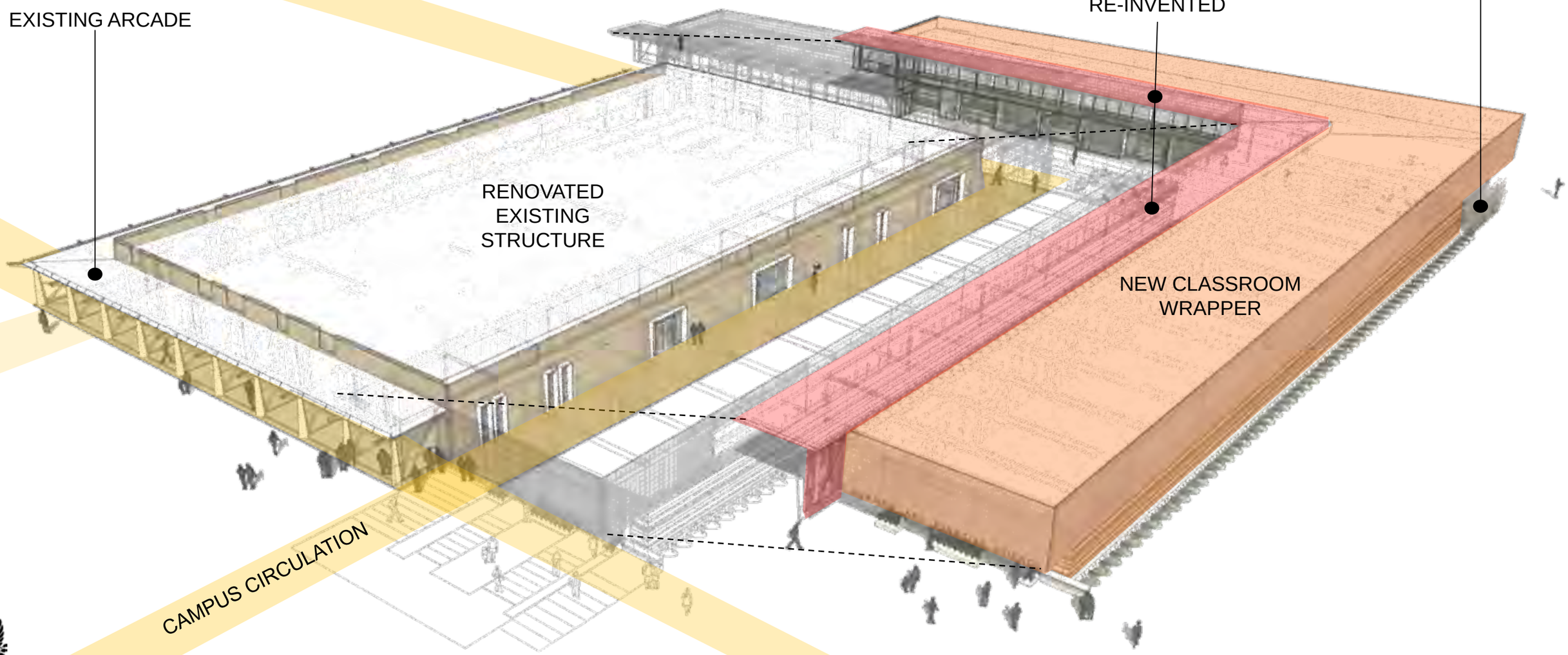

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SITE/FLOOR PLAN

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SPACE TYPE

1. Faculty Offices
2. Lobby/ Student Lounge
3. Nursing Simulation Suite
4. Exercise Science Suite
5. New Classrooms
6. New Interior Mall
7. Corner Plaza
8. Exterior Arcade

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The simple hovering metal volume moves to the background at night, scraping an articulated masonry wall with light from a hidden cavity.

SMITHGROUP JJR

AIA

The 1960’s vintage exterior arcades are re-invented as a volumous interior mall that welcomes students in and honors the fifty year old existing circulation system.

SMITHGROUP JJR

AIA

New and old are woven together seamlessly while care is taken to integrate and honor the scale, character and modularity of the vintage sister structure s well as adjacent buildings.

SMITHGROUP JJR

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REINVENTING THE EXTERIOR ARCADE

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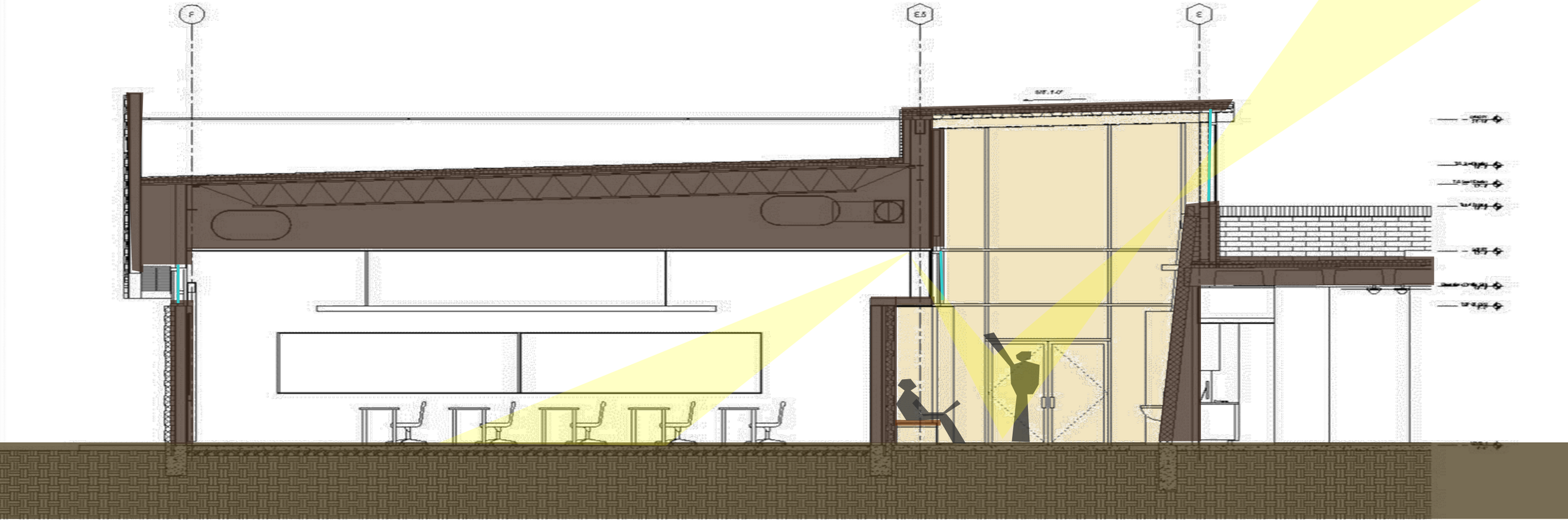

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The new mall provides transparency into classrooms as well as the previously solid masonry structure. The lid of the mall is extended vertically to harvest daylight from the north.

AIA

Beam pockets left vacant when the old arcade was removed act as housings for indirect light fixtures. Acoustical deck softens the hardness of this honest architectural enclosure.

Borrowed light and transparency create an open and connected learning environment for students and faculty accustomed to cramped and column filled classrooms and portables.

SMITHGROUPJJR

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The existing wall slab roof structure is exposed and celebrated, while being used as a large indirect light fixture. A warm palette of wood and vibrant color contrast the clean white concrete common spaces.

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‘Skills Practice’ educational spaces and anatomical models are put on display at the main entry, creating a provocative advertisement for this previously obscured program.

SMITHGROUP JJR

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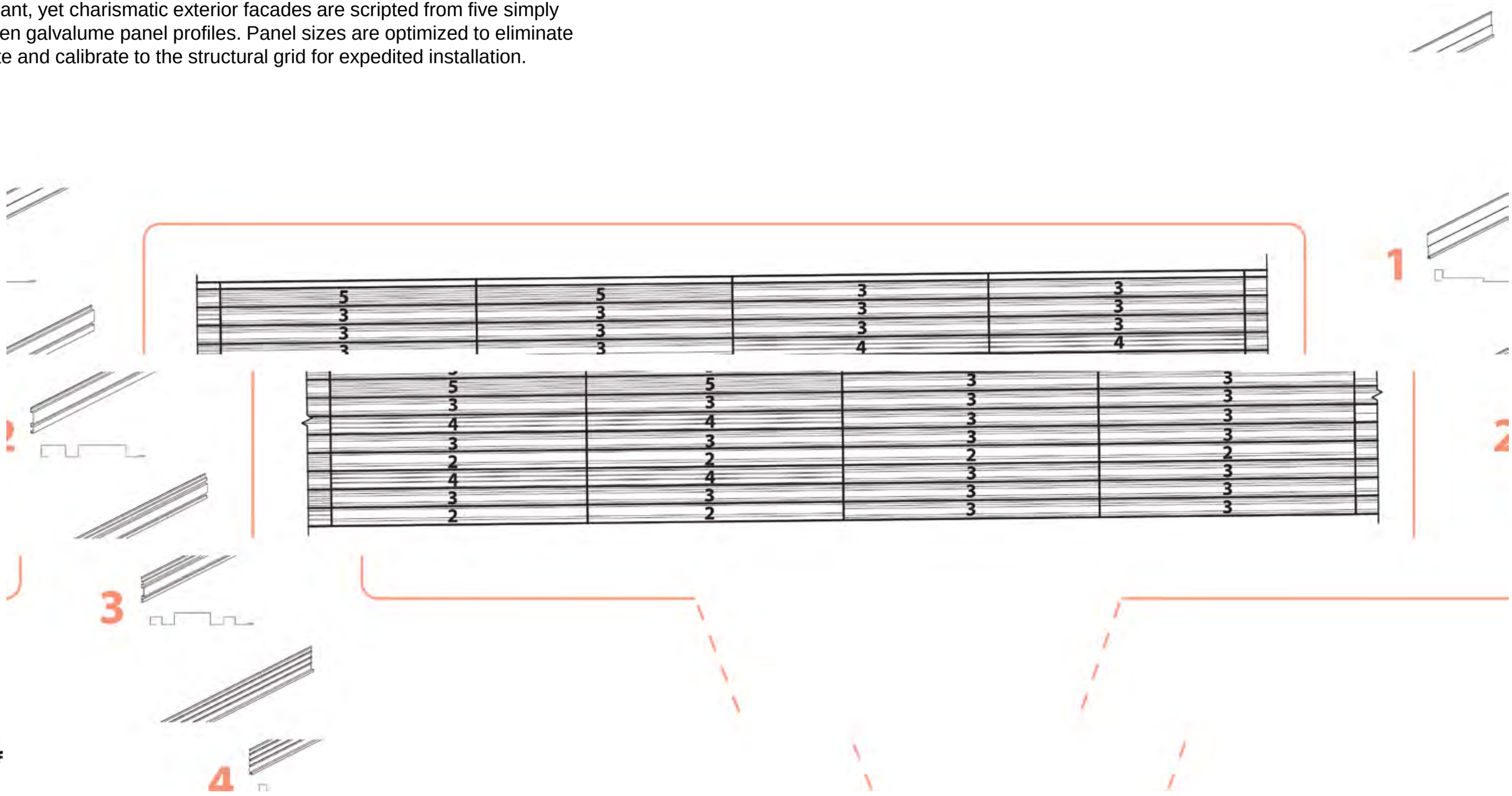
Students are offered a variety of types of casual interaction space with varied furniture and technology infrastructure.

A simple yet visible front door is carved at the campus interior where the old arcades are maintained, while students entering and leaving campus are ushered past an unintimidating and poetic composition of articulated masonry and dancing metal panels.

DANCING METAL PANELS

SMITHGROUP JJR

Elegant, yet charismatic exterior facades are scripted from five simply broken galvalume panel profiles. Panel sizes are optimized to eliminate waste and calibrate to the structural grid for expedited installation.



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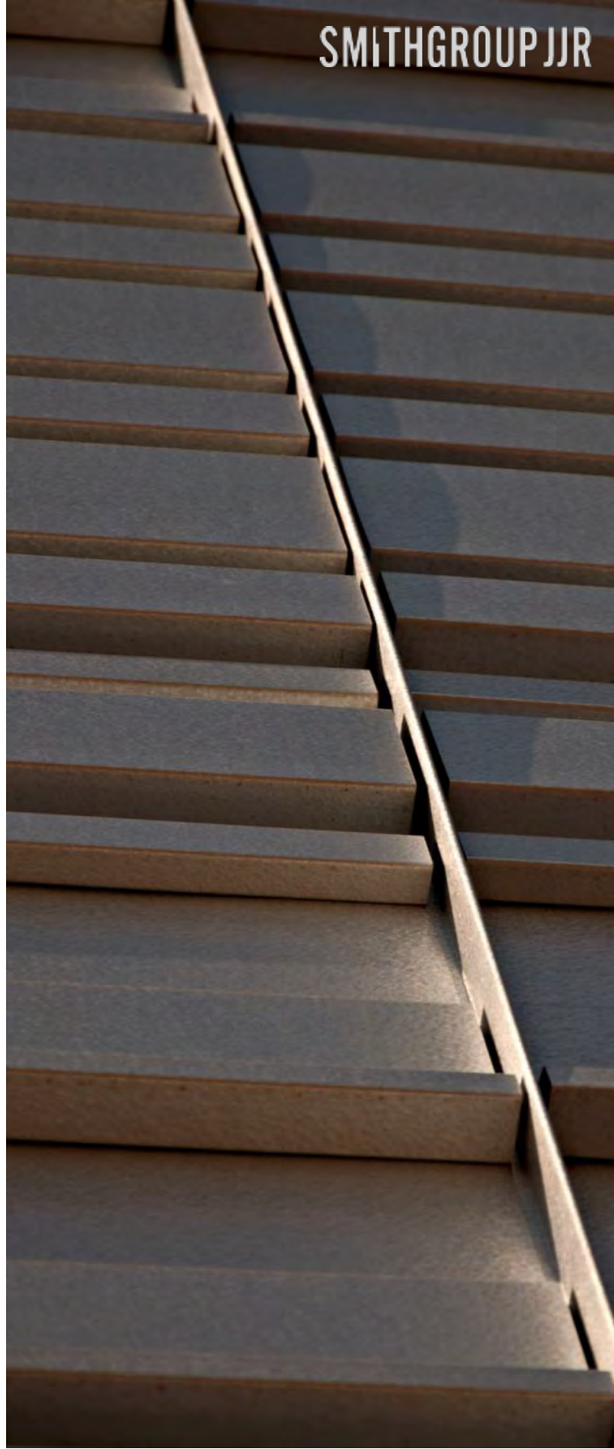
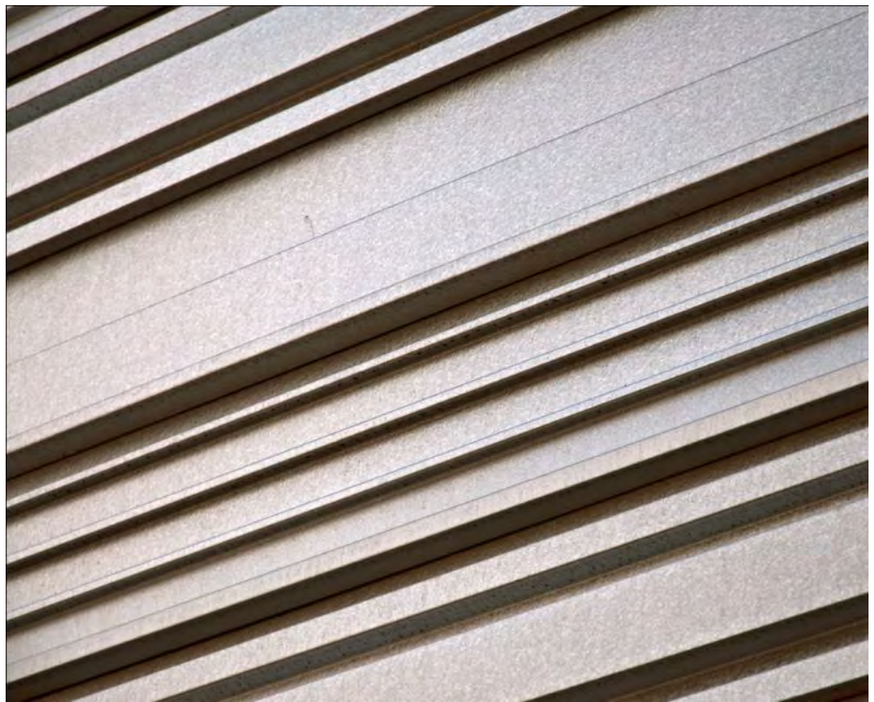
The playful composition of metal and masonry create a singular and cohesive architectural solution for this low budget renovation project.





The corner at a primary campus entry is removed to create an active shaded outdoor plaza space that becomes a usable student court year round.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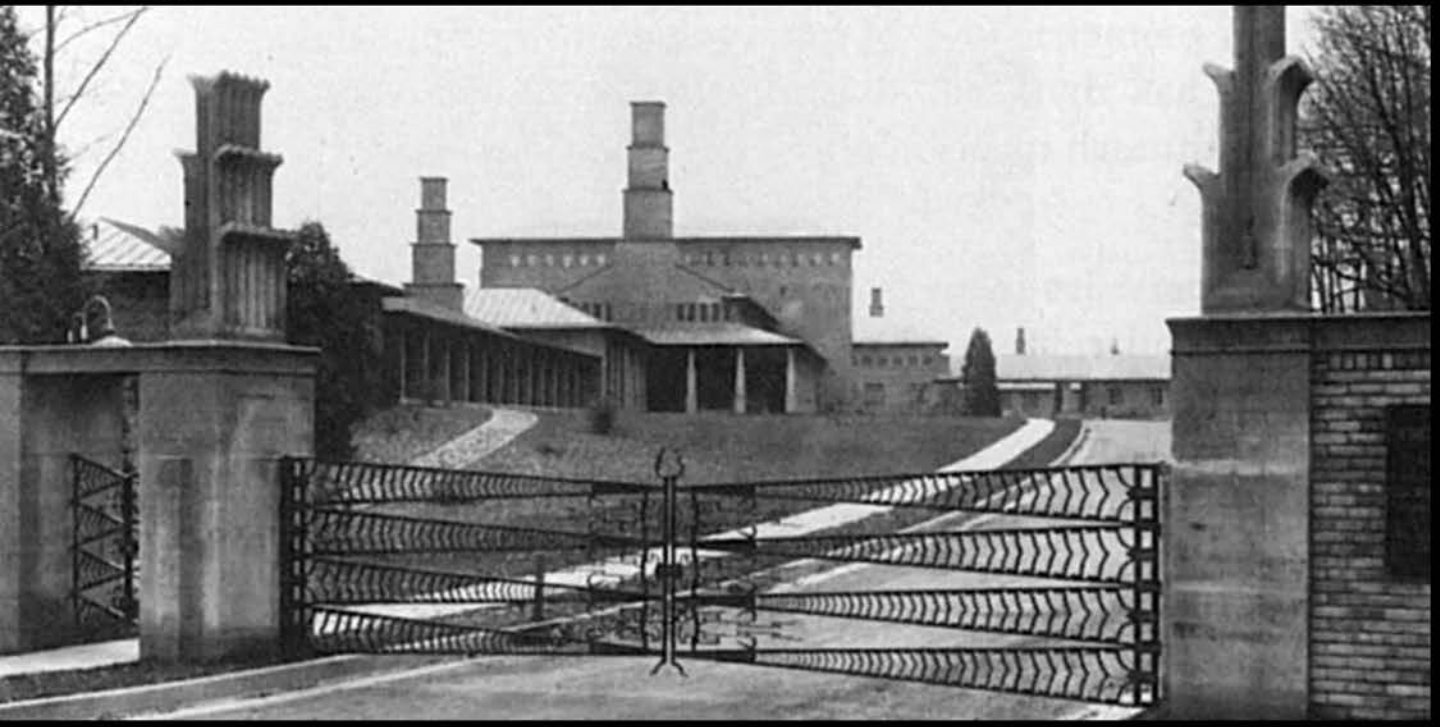
Cranbrook Kingswood Girls' Middle School

Bloomfield Hills, Michigan

Lake|Flato

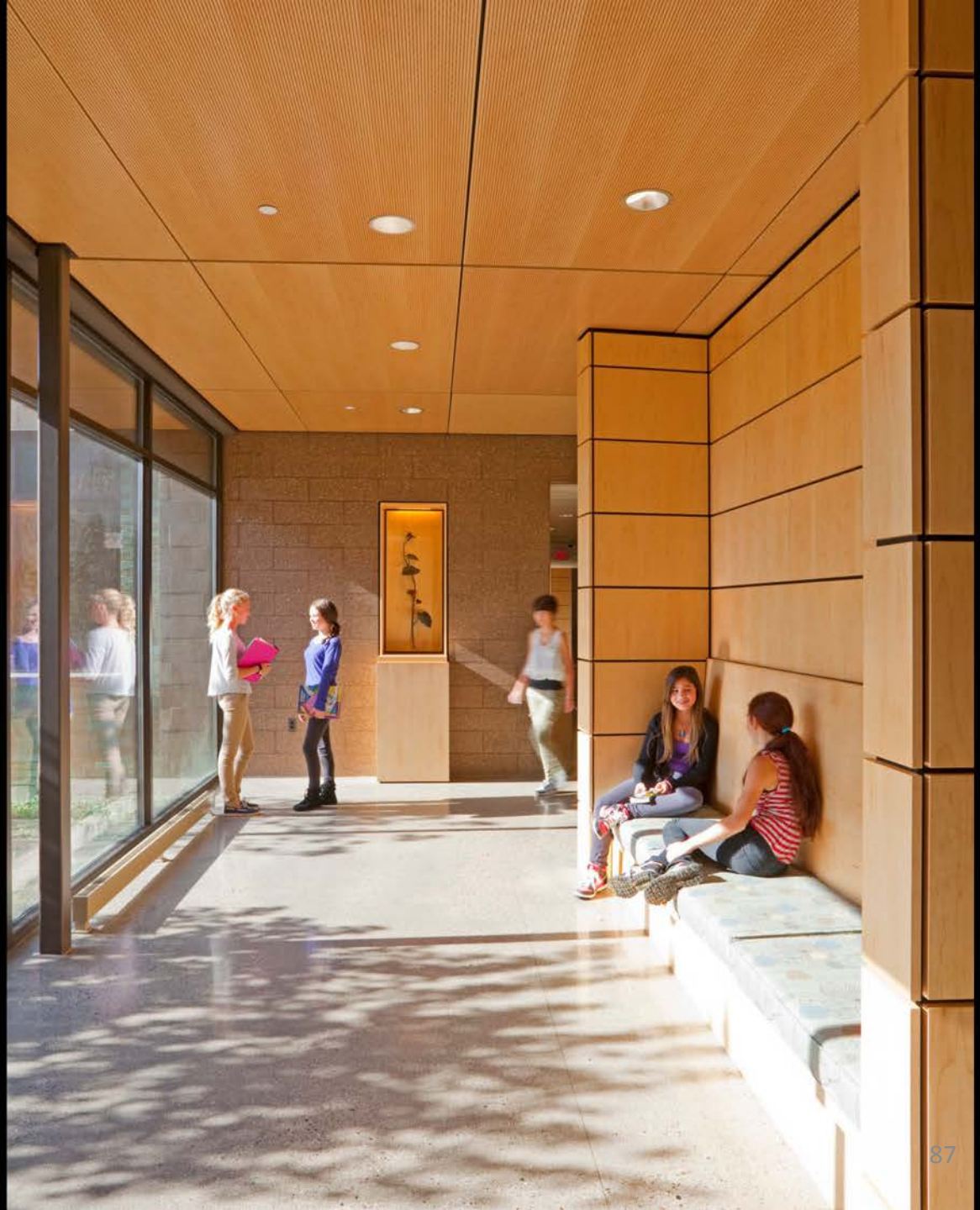

Saarinen Era Buildings
Recent Additions
Kingswood Girls' Middle School

old campus



new campus


1 Fitness
2 Gymnasium
3 Kitchen
4 Dining
5 Library
6 Administration
7 Art
8 Computer Classroom
9 6th Grade Classroom
10 Language Classroom
11 Science
12 Drama / 6th Grade Commons
13 7th Grade Classroom
14 Choral / 7th Grade Commons
15 8th Grade Classroom
16 Dance / 8th Grade Commons
Visual Connection to Landscape
LOBBY
COURTYARD
COURTYARD
COURTYARD
PLAYING FIELD



Conclusions

- Eighty four 2013 submissions represented PK12, library, athletic, university, community college, community center and various other learning environments
- More renovations and additions
- Excellence in planning and design is nationwide, not regional
- Increase in the use of natural light throughout
- Increased outdoor socializing and learning spaces
- Community collaboration in the design process
- Environmentally connected and energy responsive shows a positive trend for the profession through:
  - Water collection, filtration and reuse
  - Green roofs and usable roof terraces
  - Sun shading daylighting techniques
  - Visual connections to outdoors

Questions?