



*Managing Metamorphosis,  
Building for Change*





Truly Flexible  
Learning Space  
Strategies for  
Evolving Teaching  
Methods

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Learning Space  
Strategies for  
Evolving Teaching  
Methods

Session: 100219

Date: Thursday, October 2, 2014

Time: 3:15 pm – 4:15 pm





*Managing Metamorphosis,  
Building for Change*



## Truly Flexible Learning Space Strategies for Evolving Teaching Methods

Presented by:

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- Heather Quiram, Assistant Director of Facilities TAMU CVM&BS
- Don Hensley, Senior Principal, SHW Now Stantec
- Dan Caren, Principal and Project Manager, SHW Now Stantec







## *Managing Metamorphosis, Building for Change*



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# Agenda

- 1** Problem Statement
- 2** Changing Student Needs
- 3** Shifts in Pedagogy
- 4** Planning for New Facilities
- 5** Results - TAMU



**UNIVERSITY**



**#1** Reason students choose a school:  
**Academic reputation**

*UCLA Freshman Survey*





#1

Reason students do not choose a school *after* a campus visit:

**Quality of facilities and culture**

# 1. Problem Statement

The current facilities do not allow the evolution of teaching pedagogies. Let's not repeat history.

*"This is supposed to be a 50-year education building - how can I design this building if I don't know how the faculty plans to teach in two years?"*

Dean Green



# 1950 Suburban Building



Existing CVMBS Building



# Limited Flexibility

Fixed Seating  
Raised Platforms  
Limited AV  
One Teaching Space





# Limited Versatility

Limited AV  
Desktops Computers  
One Teaching Wall  
Poor Lighting



# Dated Interiors

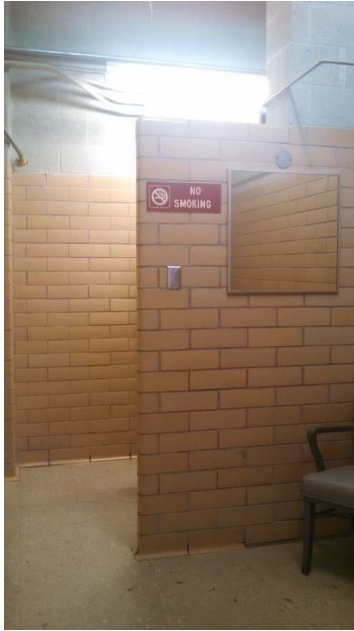
6 foot corridors  
No student support  
spaces.  
No staff support  
spaces.



# Limited Space

Trailers modified for additional teaching space.





# Limited Space

Poor  
accommodations  
Limited accessibility



# 1916-2016



*"We don't need animal experts, we need education design experts.  
We'll teach you about the animals."  
- Dean Green*

# Dean's Vision



Dean Mark Francis, 1916



Dean Eleanor Green, 2016

Transformative

Collaborative

Innovative



## 2. Changing Student Needs

“We need to prepare students for THEIR future not OUR past”

-Ian Jukes, Educator and Futurist

*How do we prepare for the unknown?*



# Transformative

Research &  
Benchmarking

Building Typology

Interdisciplinary  
culture



# Transformative

Research &  
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Building Typology

Interdisciplinary  
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Research &  
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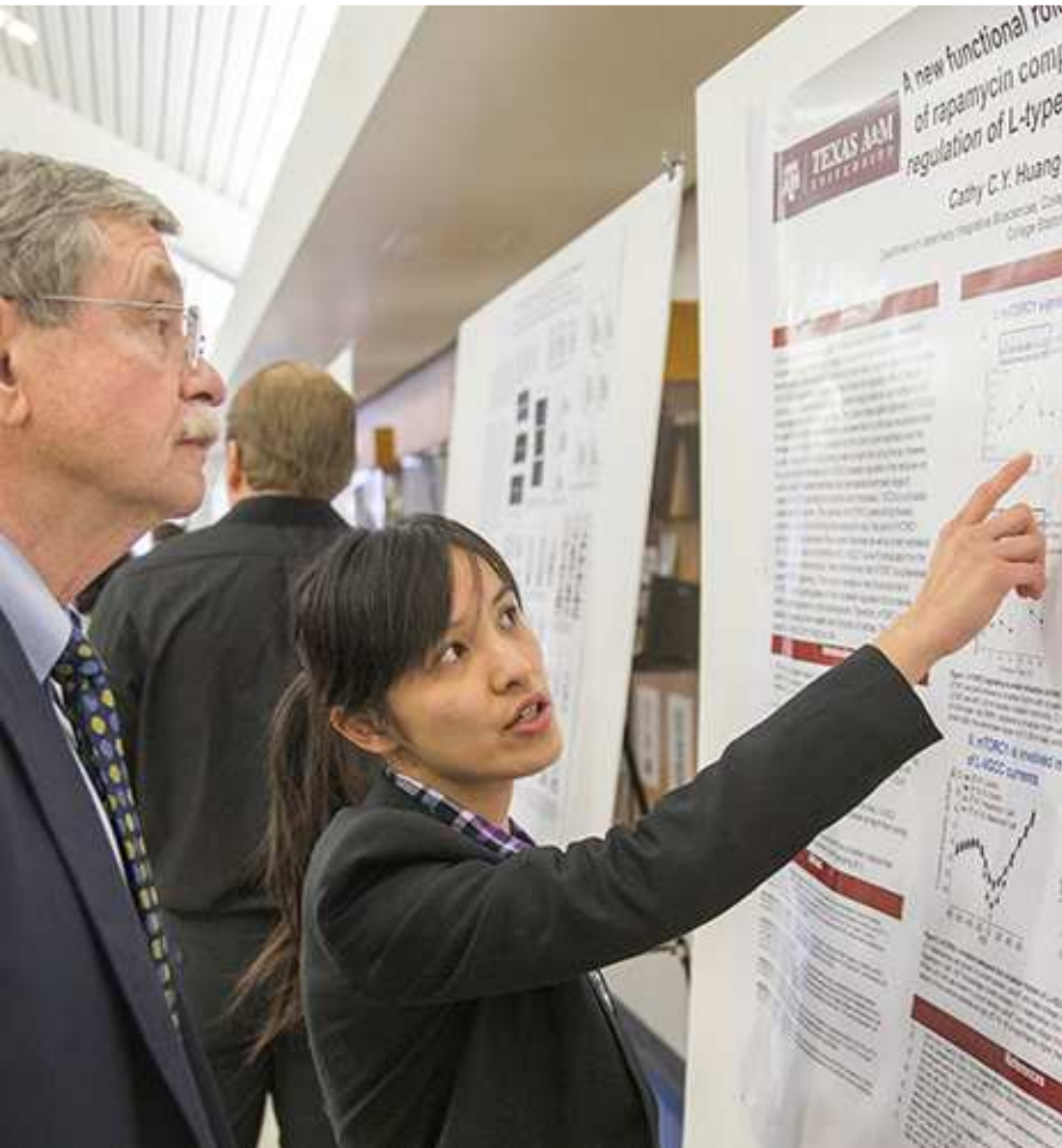


# Collaborative

Design Process

Student Presentations

Teaching/Learning  
Environment



# Collaborative

Design Process

Student Presentations

Teaching/Learning  
Environment





# Collaborative

Design Process

Student Presentations

Teaching/Learning  
Environment



# Innovative

21<sup>st</sup> Century  
Technology

Flexible spaces

Simulators-Future  
needs



# Innovative

21<sup>st</sup> Century  
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# Innovative

21<sup>st</sup> Century  
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Flexible spaces

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needs

### 3. Shifts in Pedagogy

Technology is only technology to those who were born before it.





# Peer-to-Peer

Early 1990's

Harvard University

Evidence-based +  
Interactive



# Peer-to-Peer

## Early 1990's

Pre-Class Assignments



In-Class **Interaction**



# Peer-to-Peer

Early 1990's

Process:

- Reflect
- Respond
- Review (peer-peer)
- Discuss
- Commit
- Review (instructor)





# Scale Up Classroom

North Carolina State

Student-Centered  
Activities for  
Large  
Enrollment  
Undergraduate  
Physics

Student-Centered  
Active  
Learning  
Environments for  
Undergraduate  
Programs

Student-Centered  
Active  
Learning  
Environments with  
Upside-Down  
Pedagogies





# Scale Up Classroom

Pre-Class Assignments  
Hands-on  
Complex  
In-Class Presentations



# Scale Up Classroom

- ↑ Problem-solving skills
- ↑ Conceptual understanding
- ↑ Attitudes
- ↓ Failure Rates





# TEAL

Late 1990's  
Technology  
Enhanced  
Active  
Learning

Massachusetts  
Institute of  
Technology



# TEAL

Late 1990's

Based on Scale-Up

Reformat to improve  
grades/drop-rate

2x learning gains!



# TEAL

**Late 1990's**

3,000 SF lab (x2)

13 round tables →  
9 students →  
3 groups of 3





# Active Learning Classrooms

(2007)

University of Minnesota



# Active Learning Classrooms

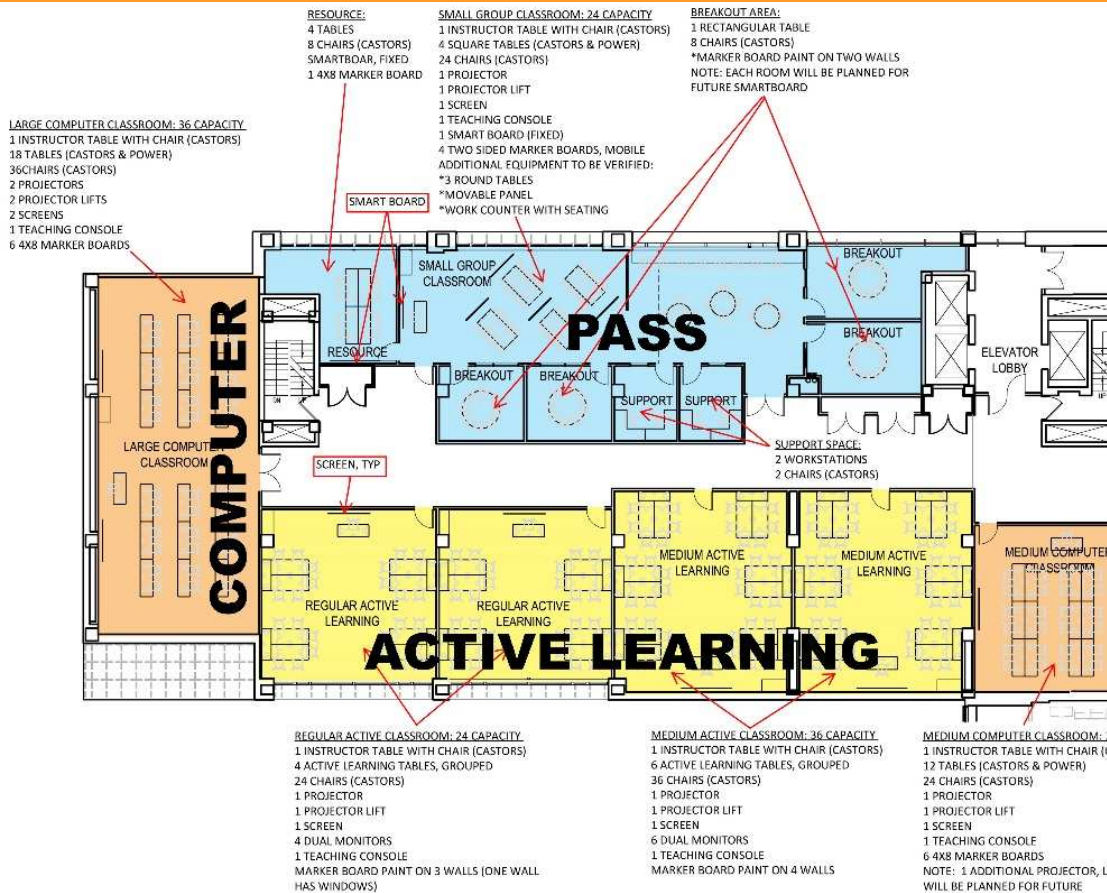
360 degree glass surface marker board

Multiple displays

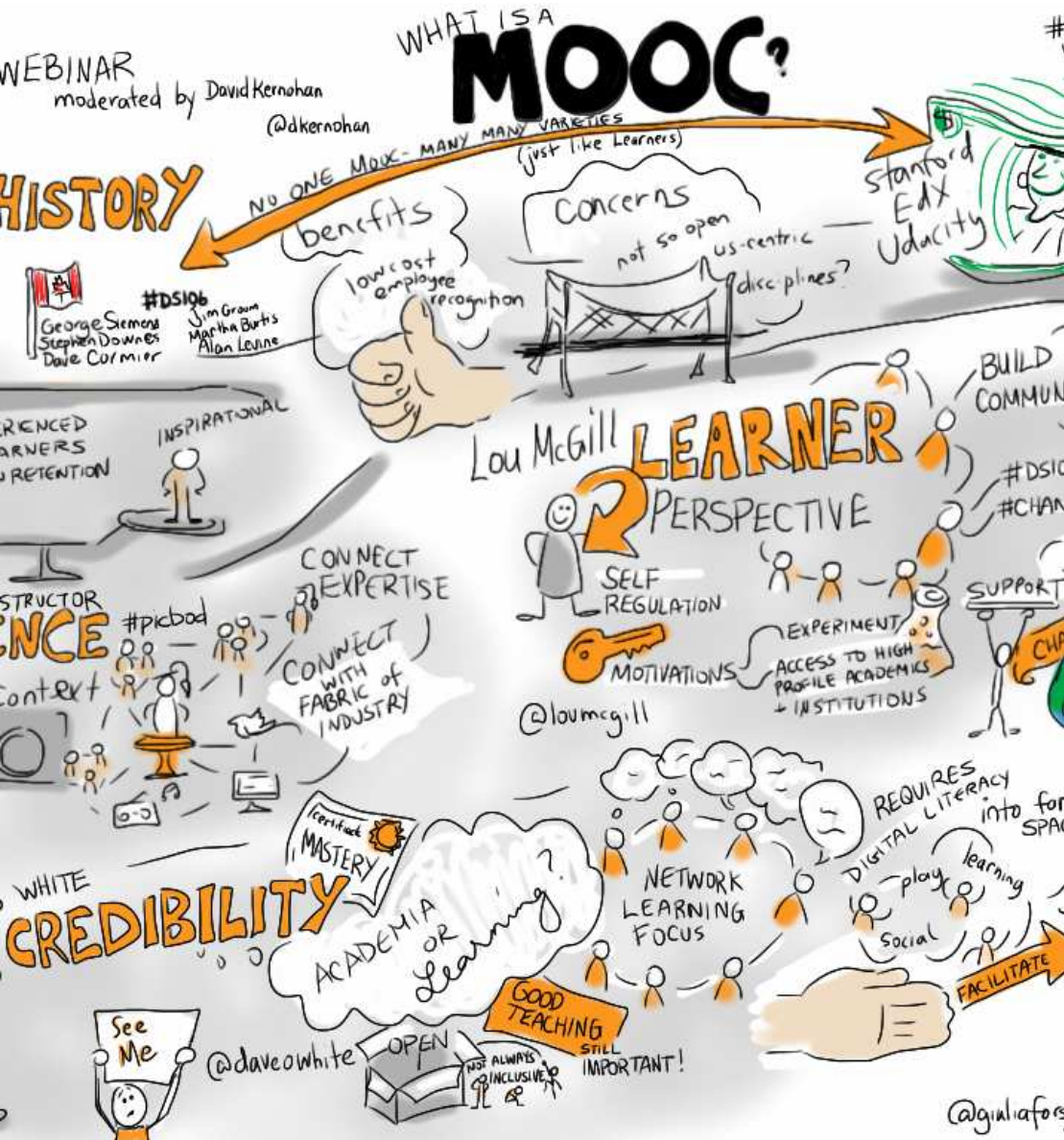
Central Teaching Station

# Active Learning Classrooms

All classrooms will be converted







# Online Learning

Massive Open  
On-Line Learning

Free! (no credit)

Top instructors, top  
schools



# Online Learning

Khan Academy

2006

>2 million users

Short, targeted videos

Lectures + challenges



# Online Learning

National Center for  
Academic  
Transformation

“emporium based  
learning”

Lectures  
Learning Resource  
Center



### 3. Shifts in Pedagogy – Two Case Studies

A good idea is about 10%.

Implementation, hard work and  
luck is 90%.

Guy Kawaski





# Flipped Classroom **Success**

Clintondale High  
School

2009

Bottom 5% school  
Half failed math,  
English, science





# Flipped Classroom Success

Clintondale High  
School

2009

Bottom 5% school  
Half failed math,  
English, science



# Flipped Classroom Success

Clintondale High  
School



Graduation rate 20%



College attendance 17%



Failure Rates to 10%



# Flipped Classroom **(Epic) Fail**

University of Virginia  
Medical School  
2010

Poor Implementation





# Flipped Classroom

## **Epic Fail**

University of Virginia  
Medical School

Approach:

Assign Foundational  
Apply in groups

“Active Learning  
Sessions”



# Flipped Classroom **Epic Fail**

University of Virginia  
Medical School

Results:

↓ Attendance - 25%

↑ Disengagement



**Poll** <http://goo.gl/rPnoiS>

Have any of these  
played any part  
influencing design of  
your teaching spaces?

Peer to Peer

Scale Up

TEAL

Active Learning

Flipped Classroom

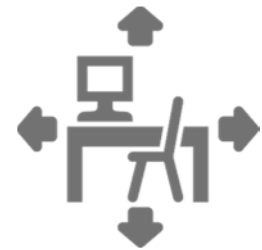
On-line Learning



## 4. Tools to Accommodate Learning

I never let my schooling interfere with my education.

Mark Twain



## Tools for Learning - 2014

Variety

Technology

Educators

Pedagogy

Environment



## Variety

24/7/365

Individual research

Project teams

Exploration labs

Small group discussion

Large group lectures

Active team labs

Break out areas

Coffee / food options





## Variety

Check:

Enable learning in multiple  
space types

Accessible

Available for impromptu use

Comfortable

Safe-Secure

Indoor / outdoor

Flexible partitions



# Technology

More than a tool

BYOD

Constant Network Accessibility

Tech Support

Multi-functional





# Technology

Check:

Power

Data

- wireless
- hard wire

Cell service

Wall and floor outlets

Backbone in place

Tech Support





# Educator

No longer sole source  
for information

Advisor  
Mentor  
Direct  
Assess  
Evaluate  
Guide



## Educator

### Check:

- Access to internet
- Enabled shared control
- One on one meetings
- Team reviews
- Seminars
- Large group presentations
- Present and display work



# Pedagogy

The art and science  
of teaching

Creativity  
Collaboration  
Problems  
Projects  
Simulation  
Understanding





# Pedagogy

Check:

Application of assigned learning in problem based exercises

Spaces dedicated to simulation of real life settings.

Enhanced lesson planning



# Environment

Variety of space  
types-supports  
multi-modal learning

Individual research  
Project teams  
Exploration labs  
Small group discussion  
Large group lectures  
Active learn labs



## Environment

Check:

It's got to roll

Multiple white boards

Multiple projection capability

35 square feet per student

Lighting control/options

Floor / wall power and data

Acoustic control

Sound amplification and control







# Challenges to Implementation

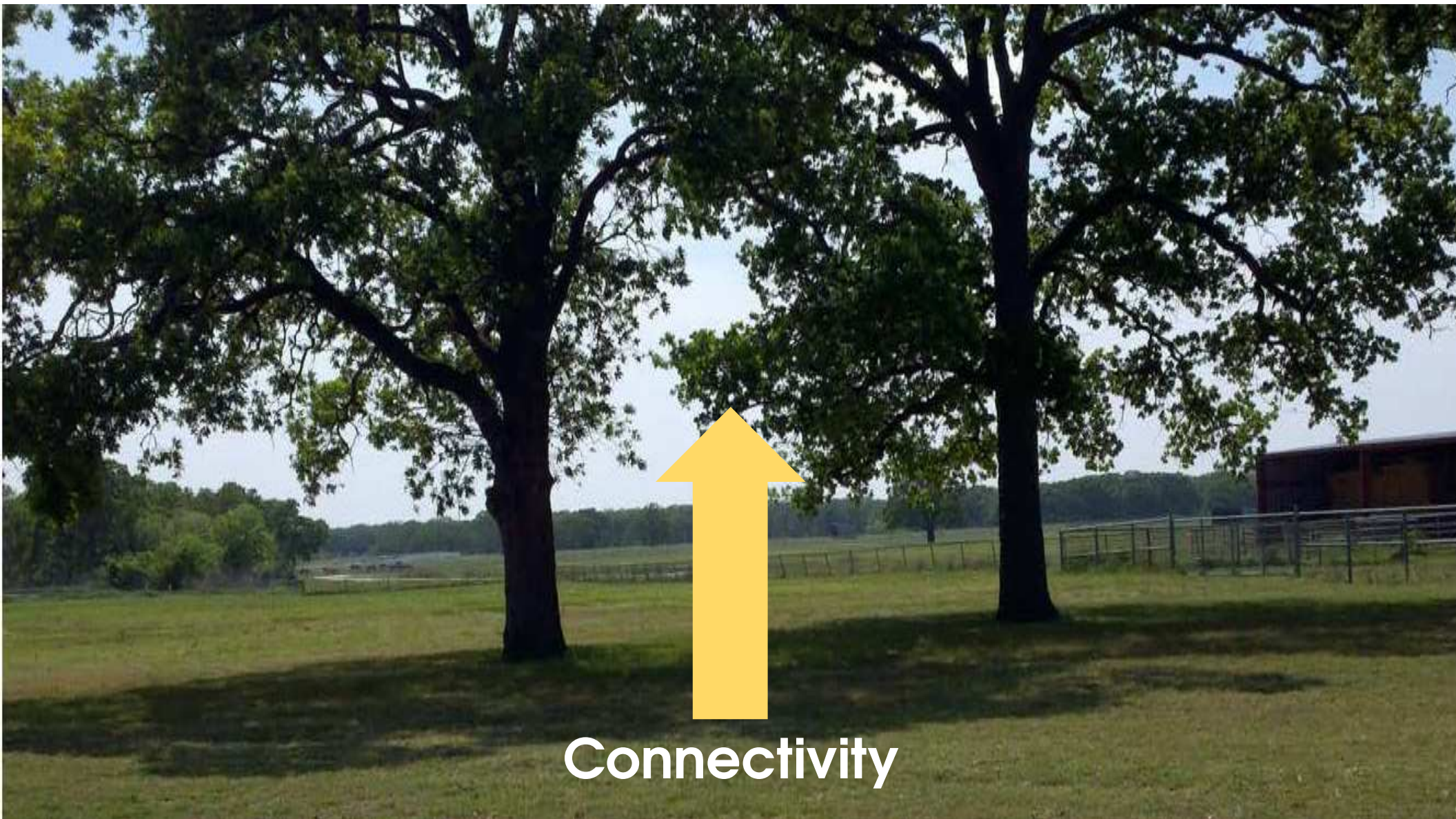
Money  
Curriculum  
Staff Evolution  
Student Evolution

# 5. Results

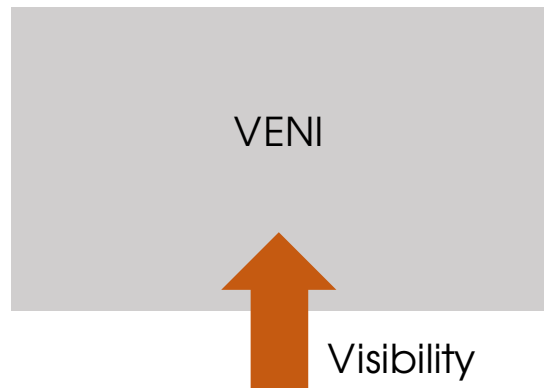
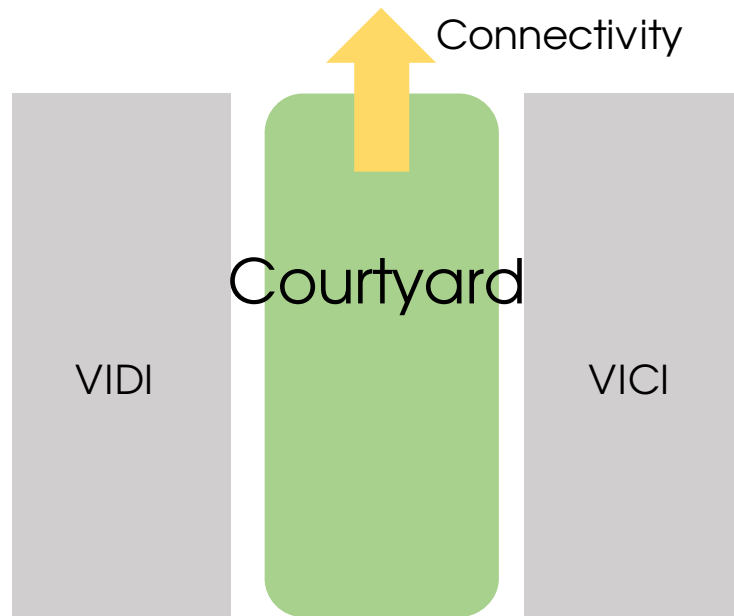
**Visibility**







Connectivity



# Organization

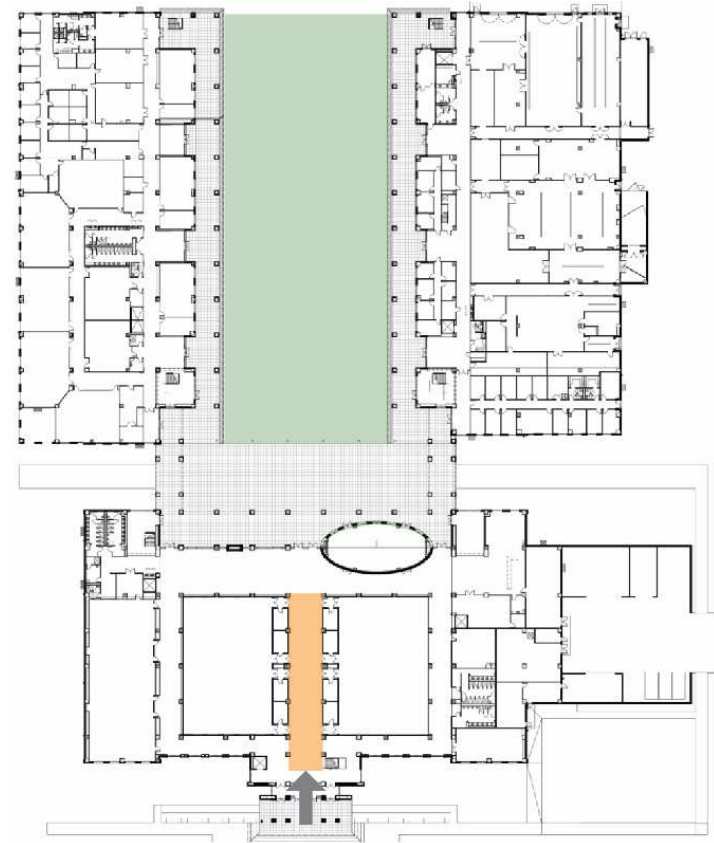








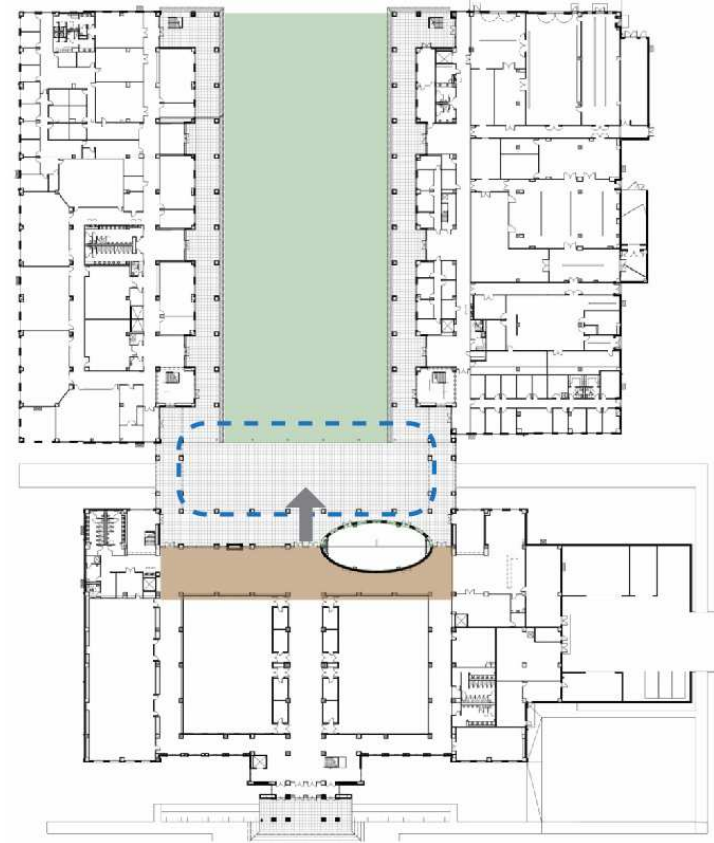
# Grand Hall



1<sup>st</sup> floor



# Student Commons

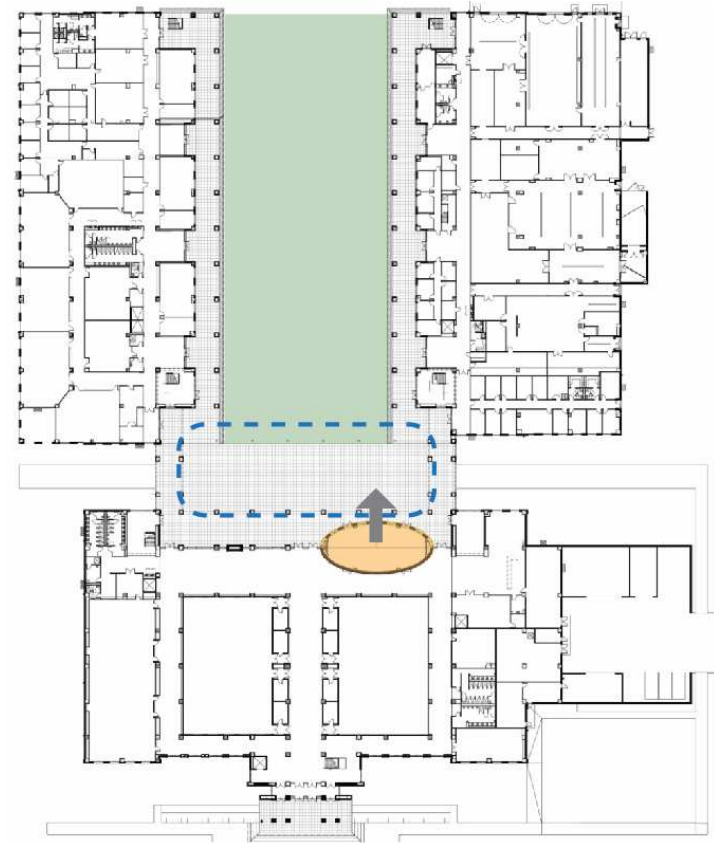


1<sup>st</sup> floor





# Dining-Café Seats 100

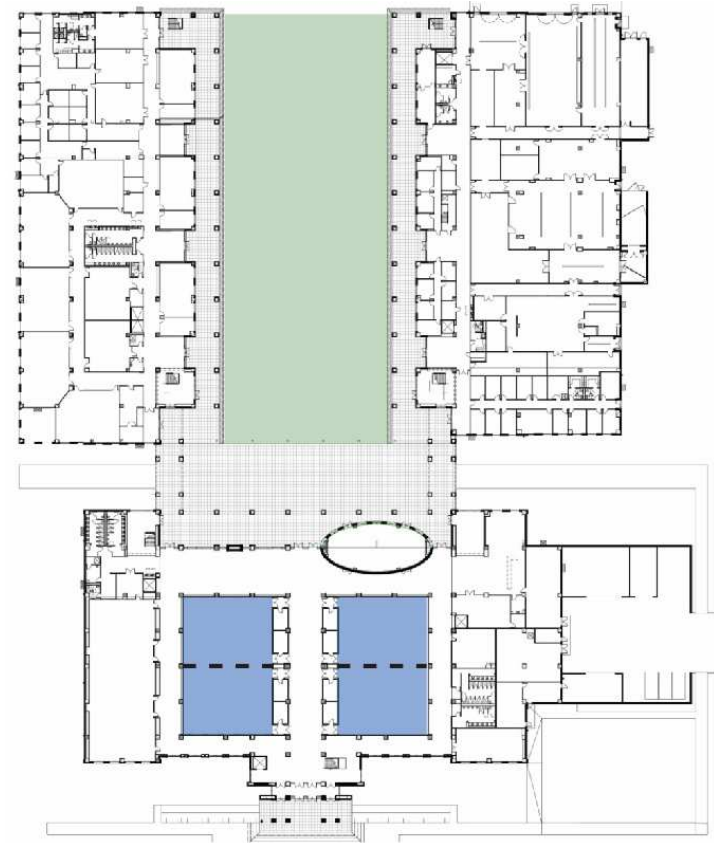


1<sup>st</sup> floor





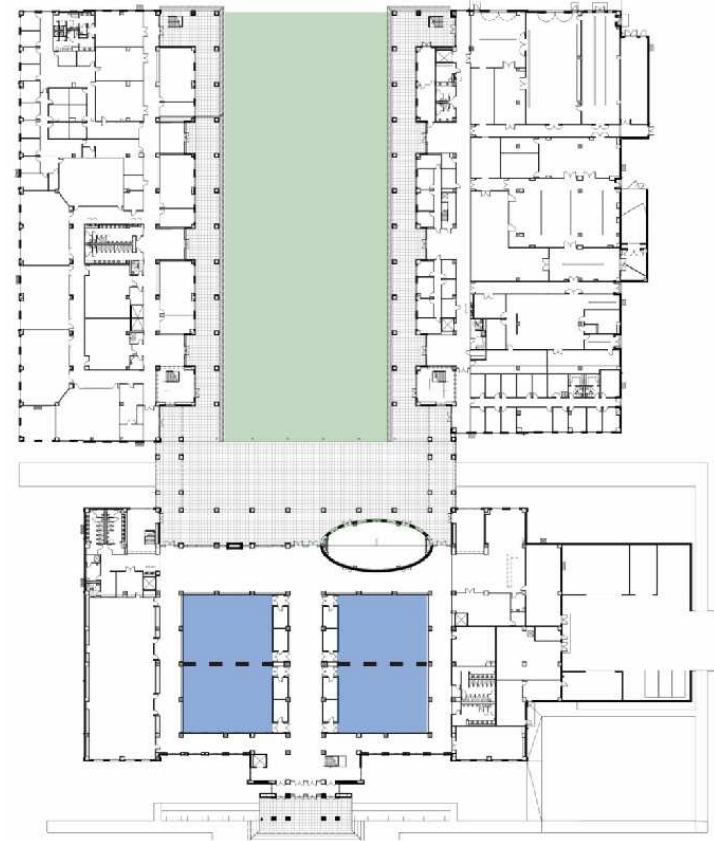
## 4 Large Meeting Rooms – 250 seats



1<sup>st</sup> floor



## 4 Large Meeting Rooms – 250 seats

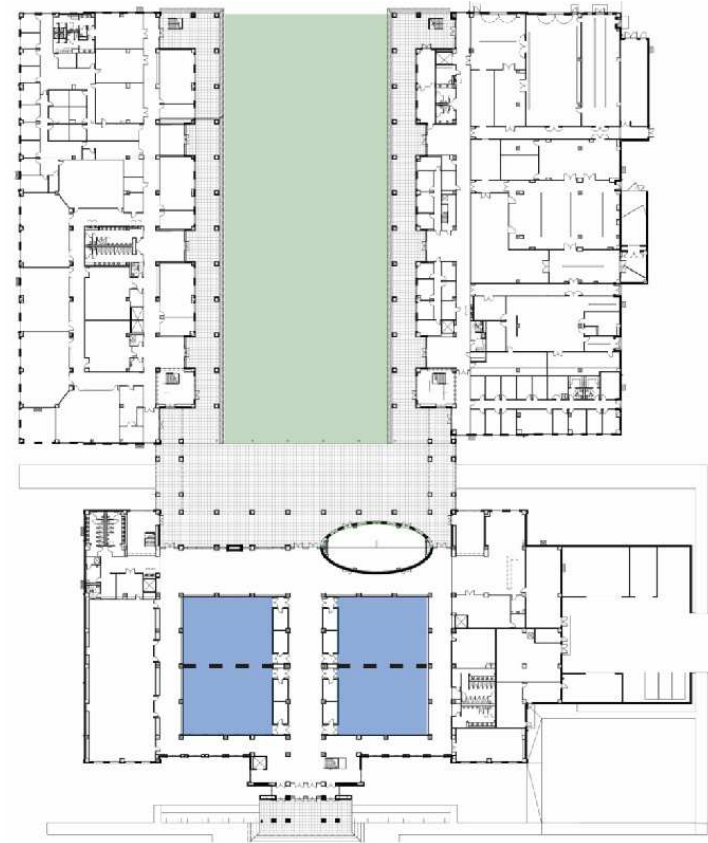


1<sup>st</sup> floor





## 4 Large Meeting Rooms – 250 seats

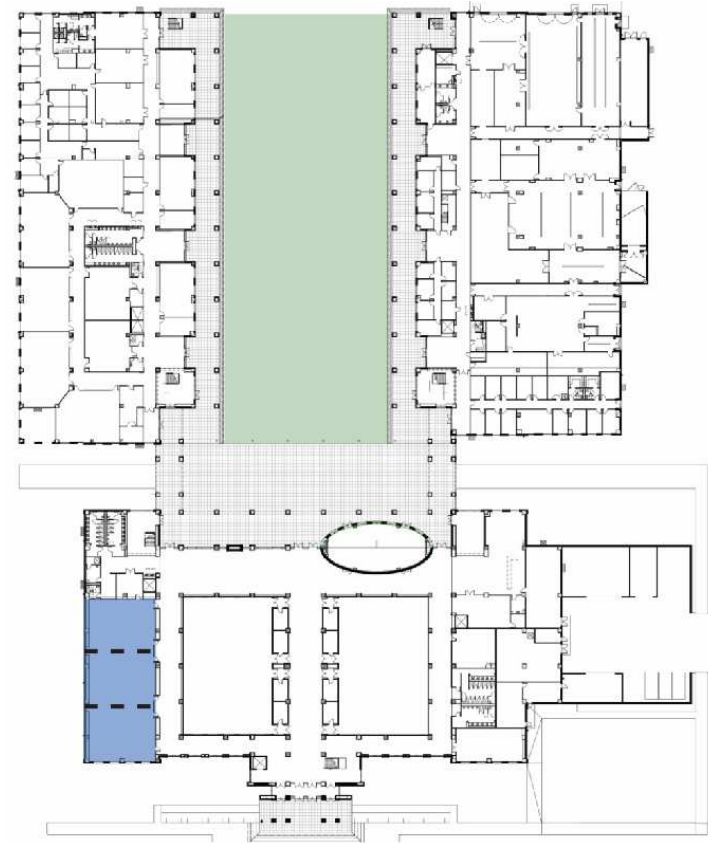


1<sup>st</sup> floor

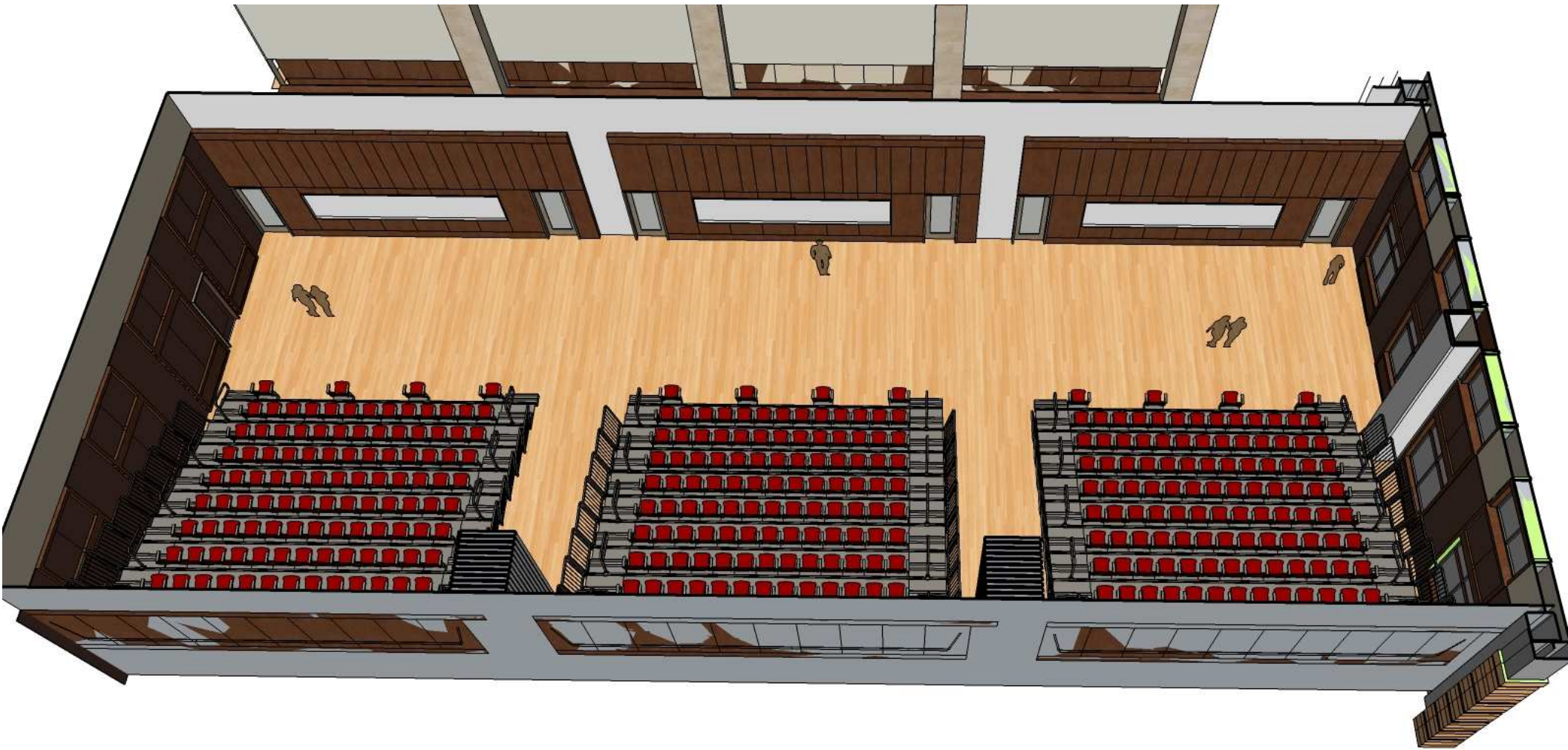




## 3 Med. Teaching Spaces – 100 seats



1<sup>st</sup> floor



3 Meeting Spaces – 100 seats each







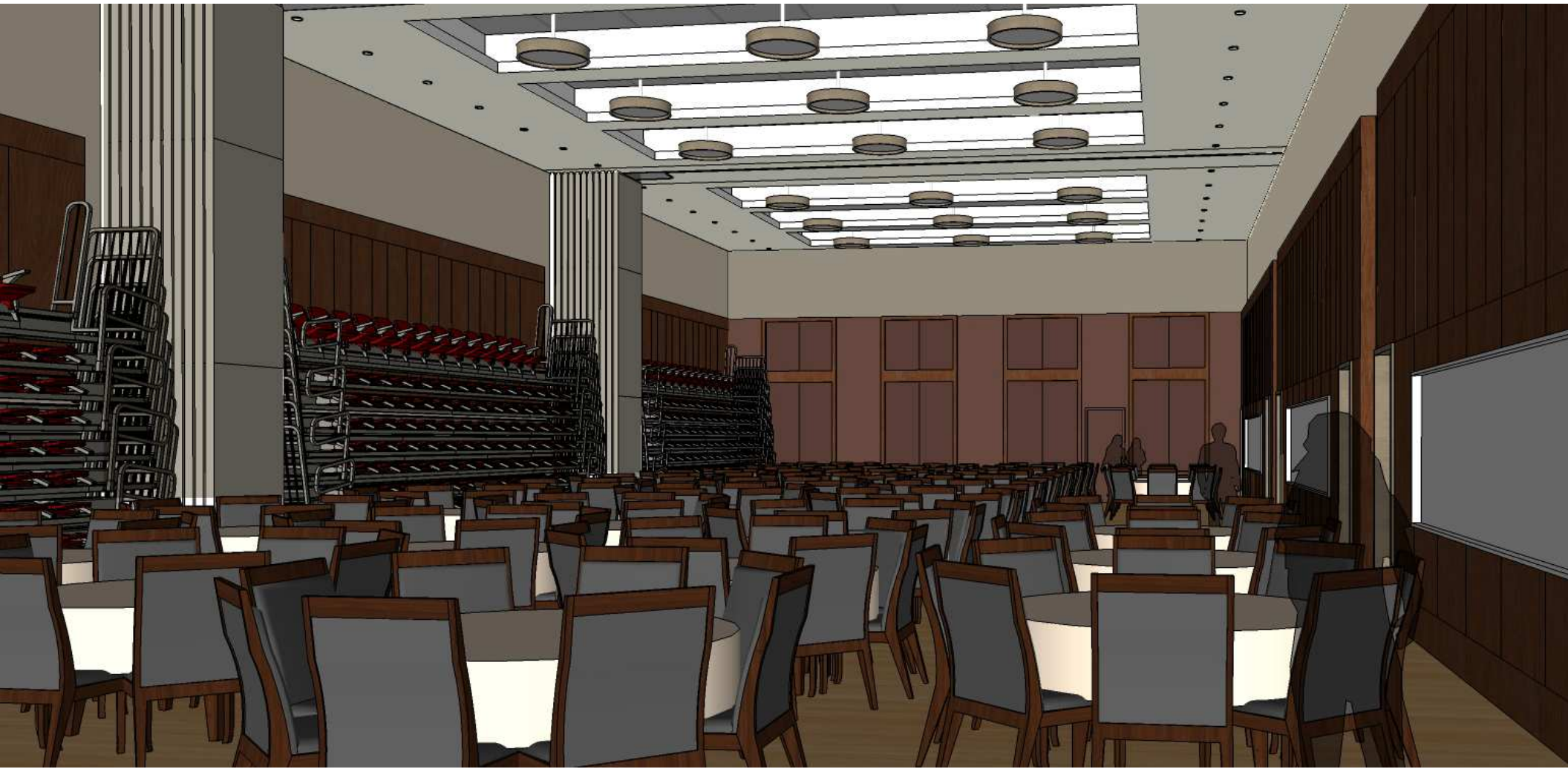
3 Meeting Spaces – 100 seats each





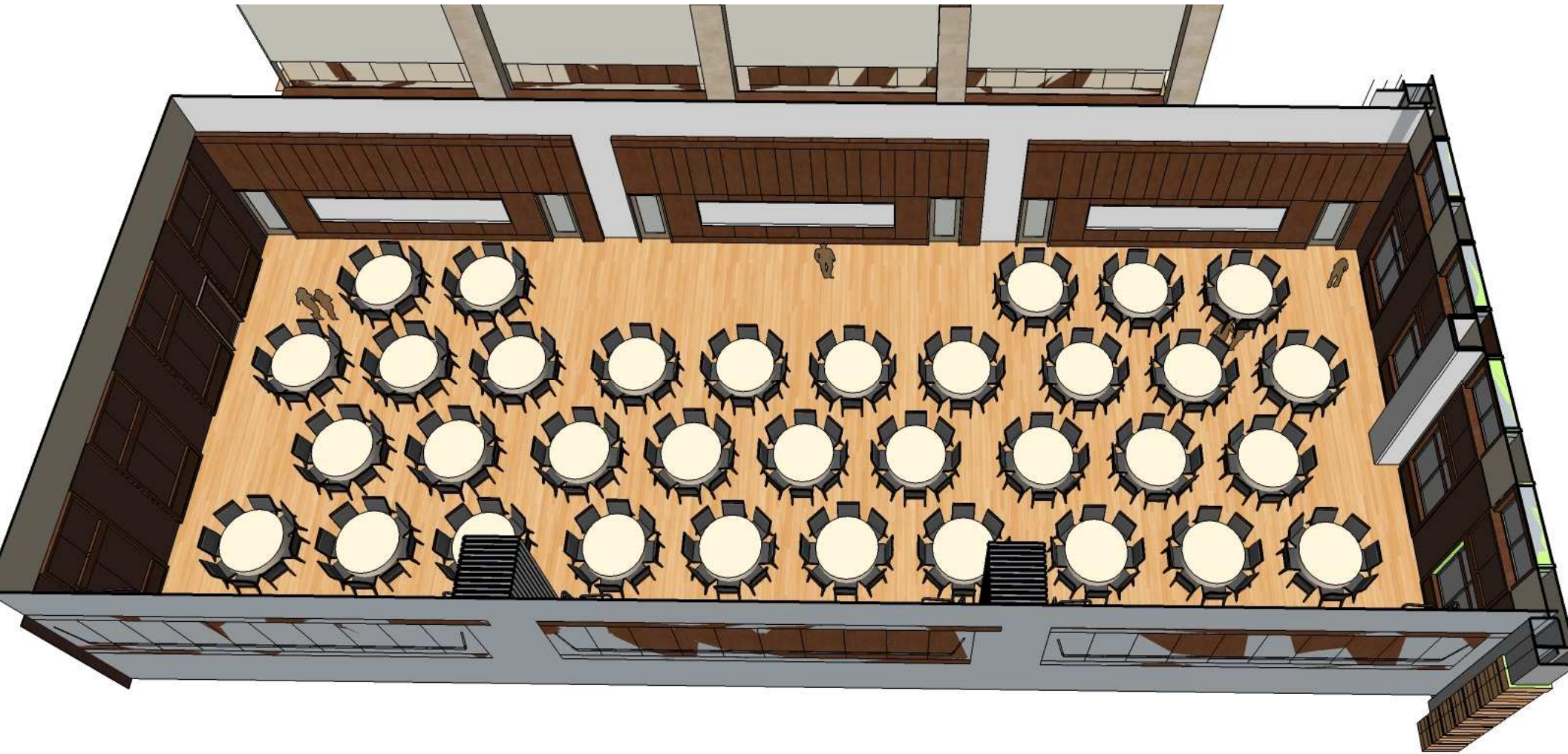
3 Meeting Spaces – 100 seats each





3 Meeting Spaces – 100 seats each





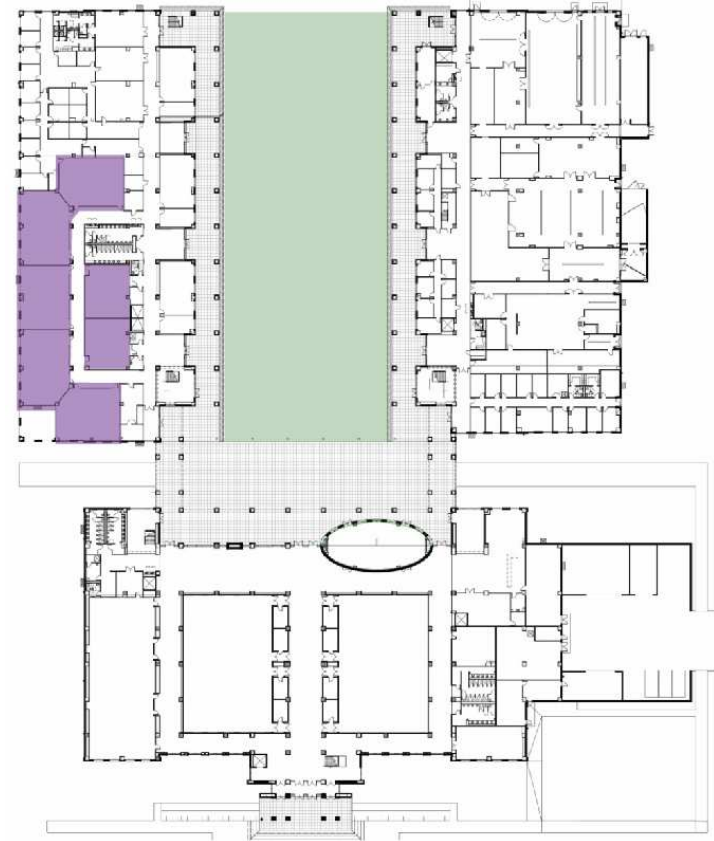
3 Meeting Spaces – 100 seats each







# Large Classrooms 50-80 seats

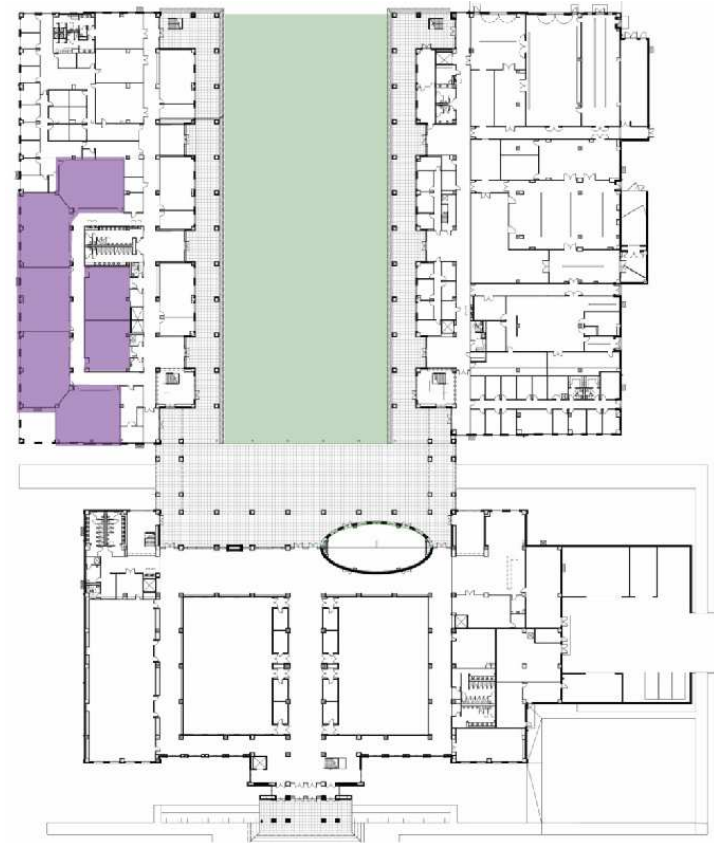


1<sup>st</sup> floor





# Large Classrooms 50-80 seats

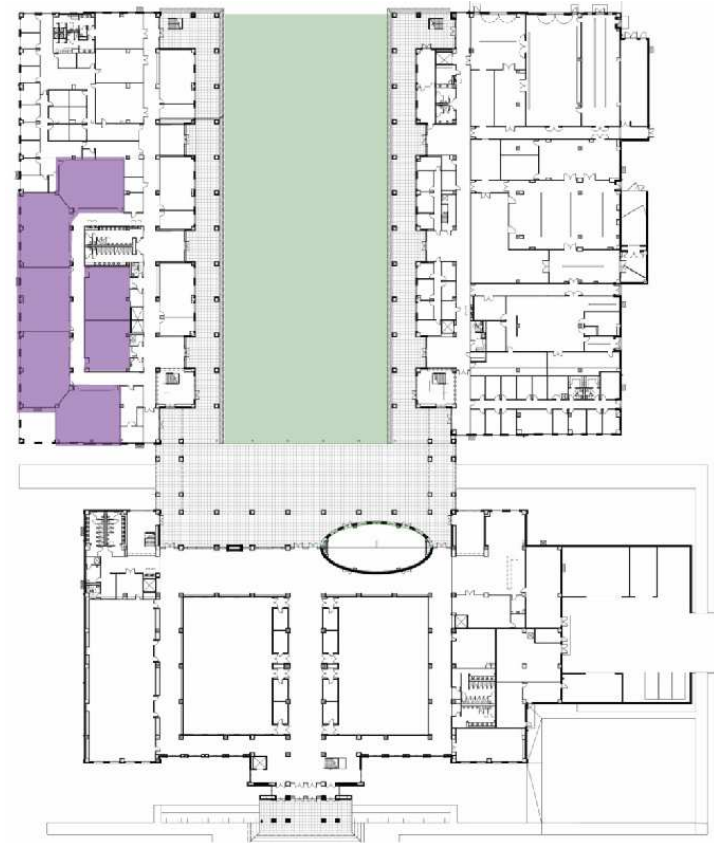


1<sup>st</sup> floor





# Large Classrooms 50-80 seats

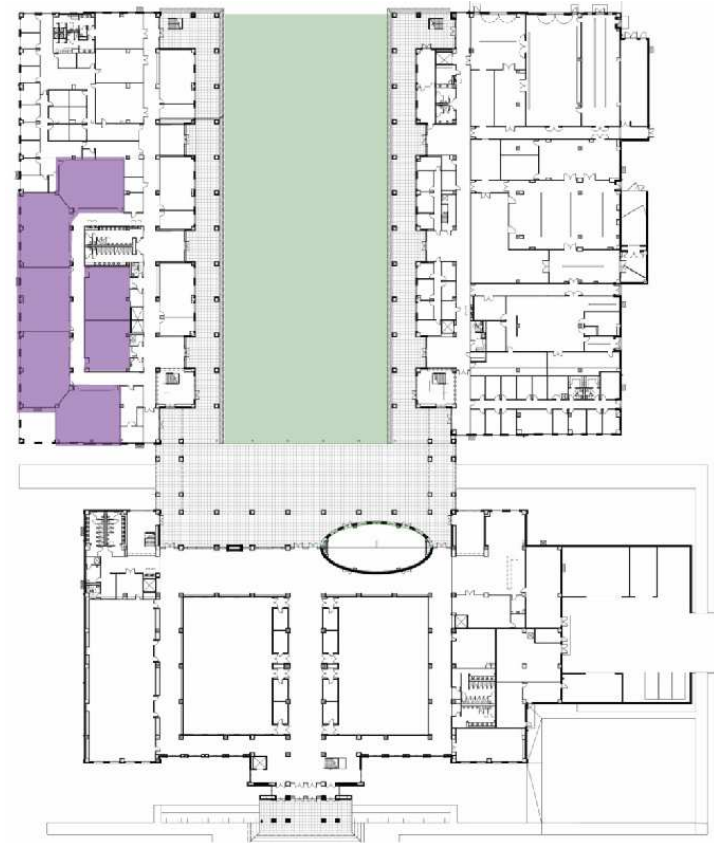


1<sup>st</sup> floor





# Large Classrooms 50-80 seats

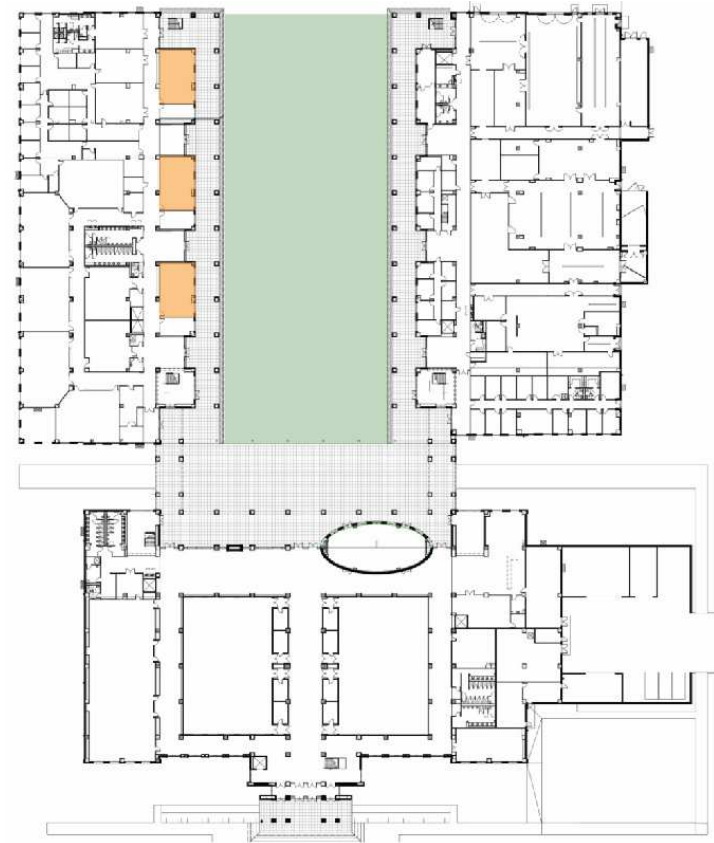


1<sup>st</sup> floor





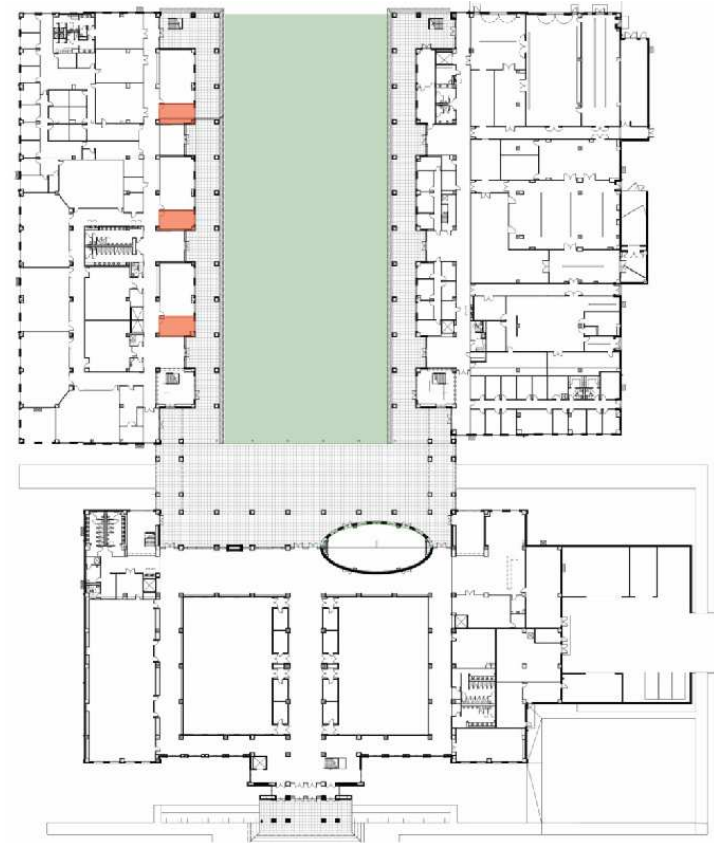
# Seminar Rooms 20-30 seats



1<sup>st</sup> floor



# Team Rooms 10-12 seats

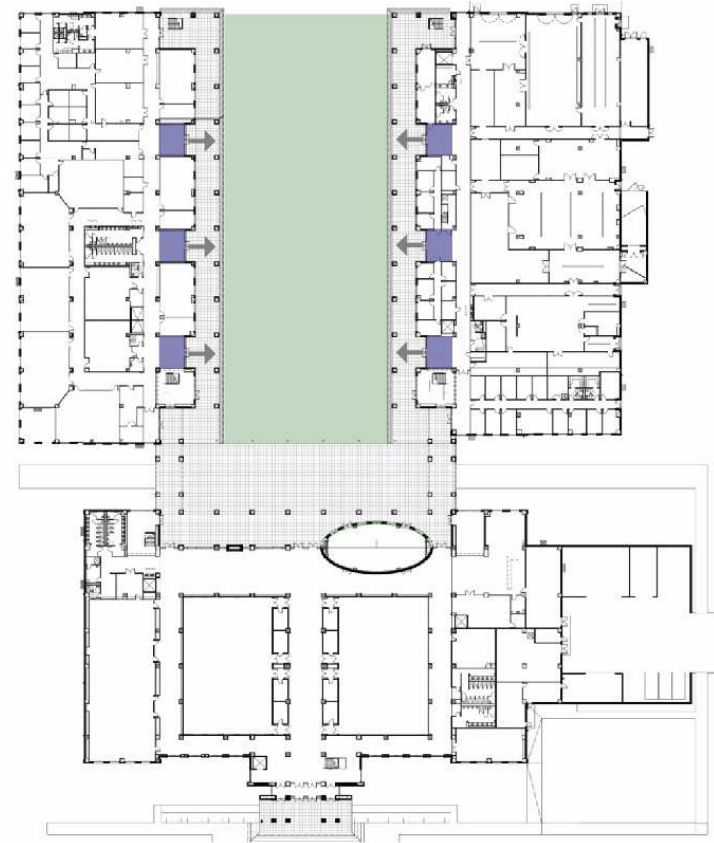


1<sup>st</sup> floor





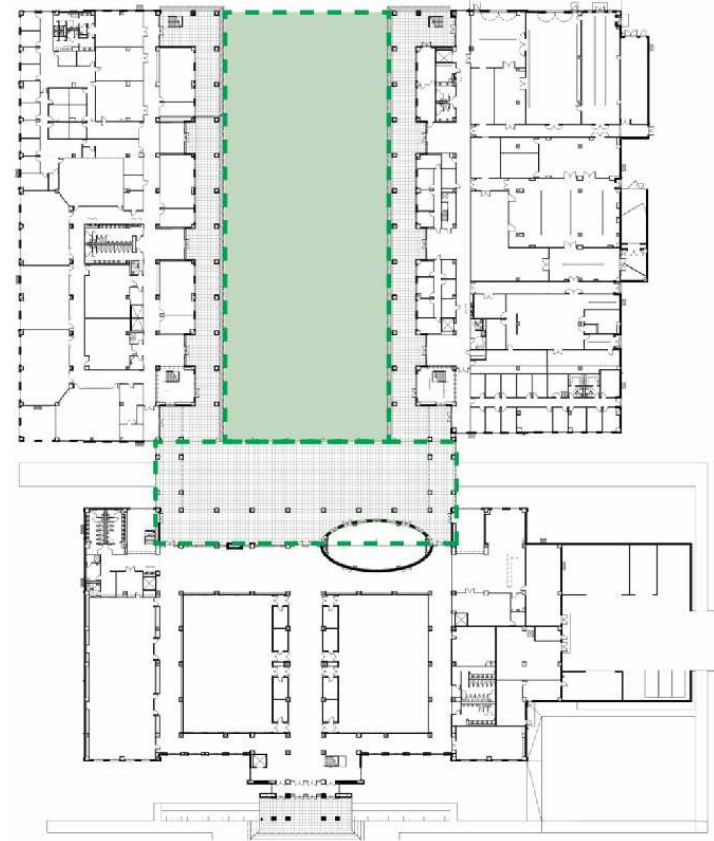
# Flex - Collaboration



1<sup>st</sup> floor



# Outdoor Learning

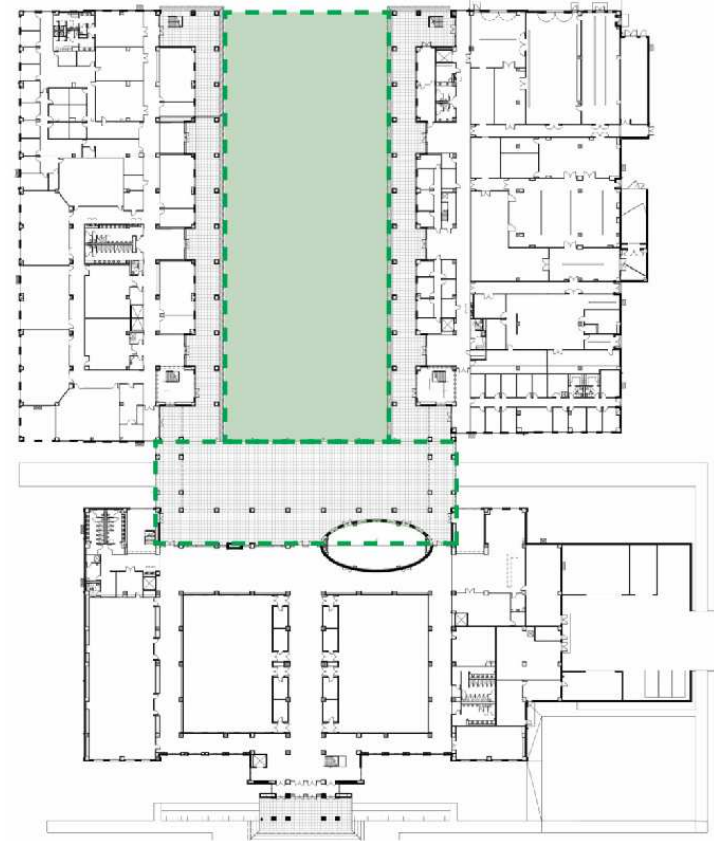


1<sup>st</sup> floor





# Outdoor Learning

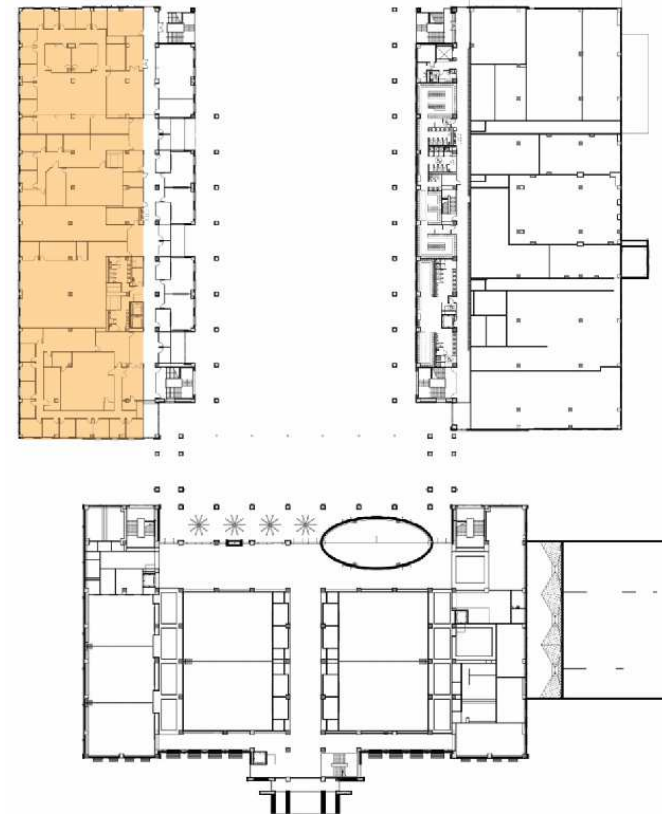


1<sup>st</sup> floor





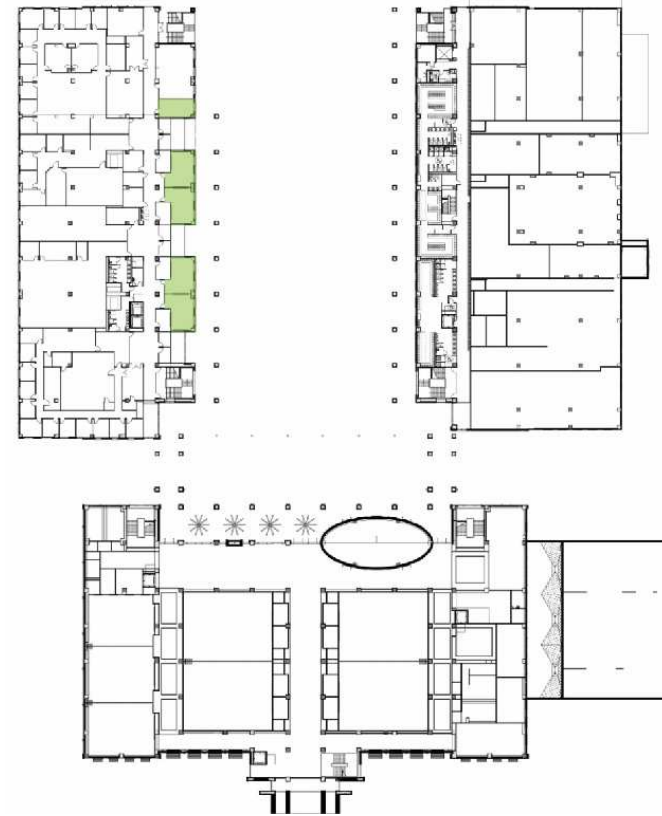
# Support Suites



2<sup>nd</sup> floor



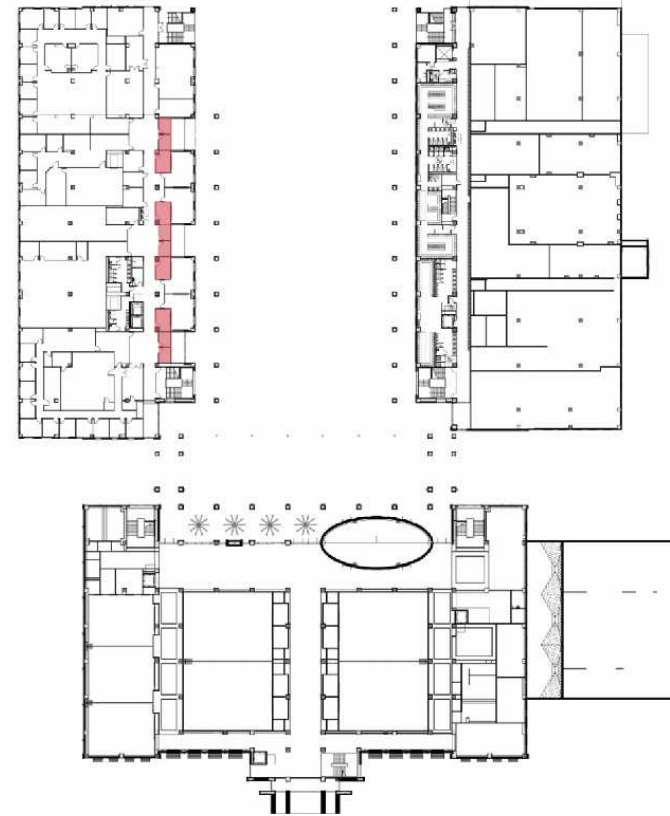
# Large Conference 16-20



2<sup>nd</sup> floor



# Small Conference 6-8

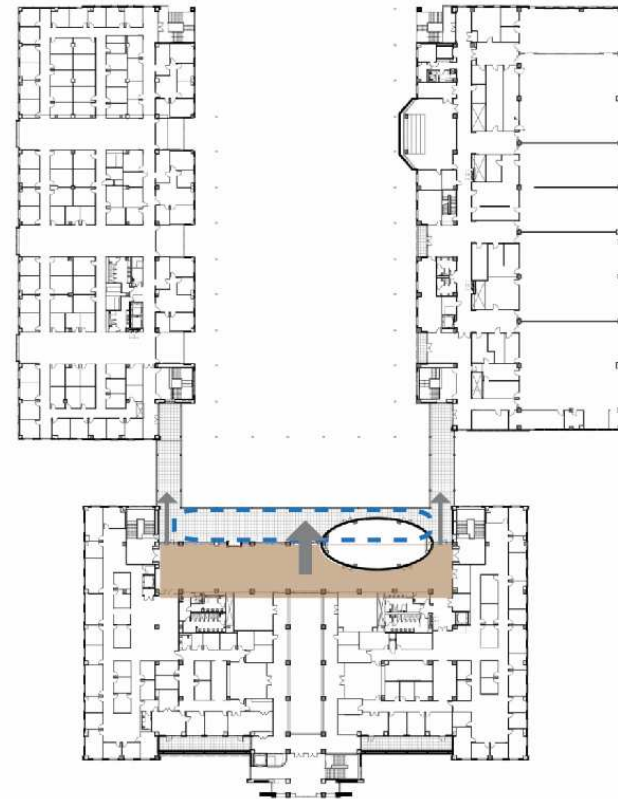


2<sup>nd</sup> floor





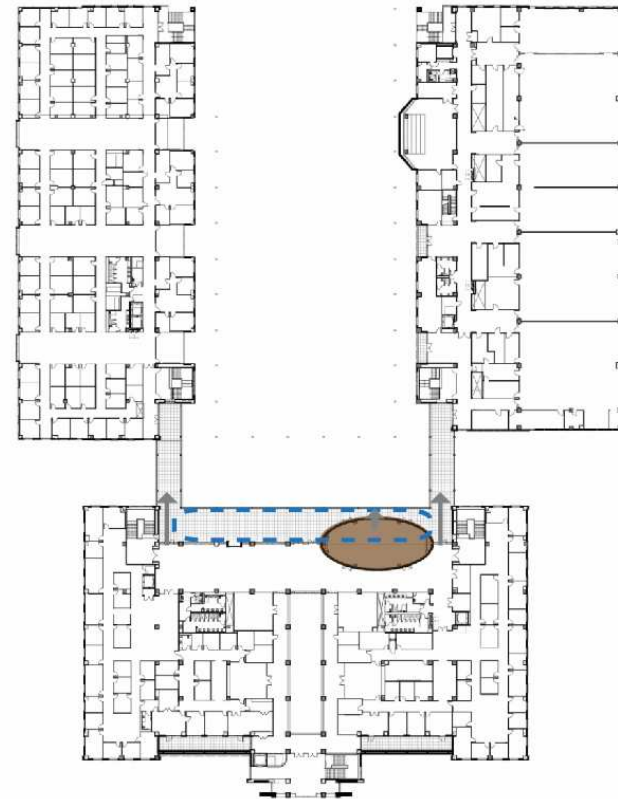
# Faculty Commons



3<sup>rd</sup> floor



## Mark Francis Conference Room

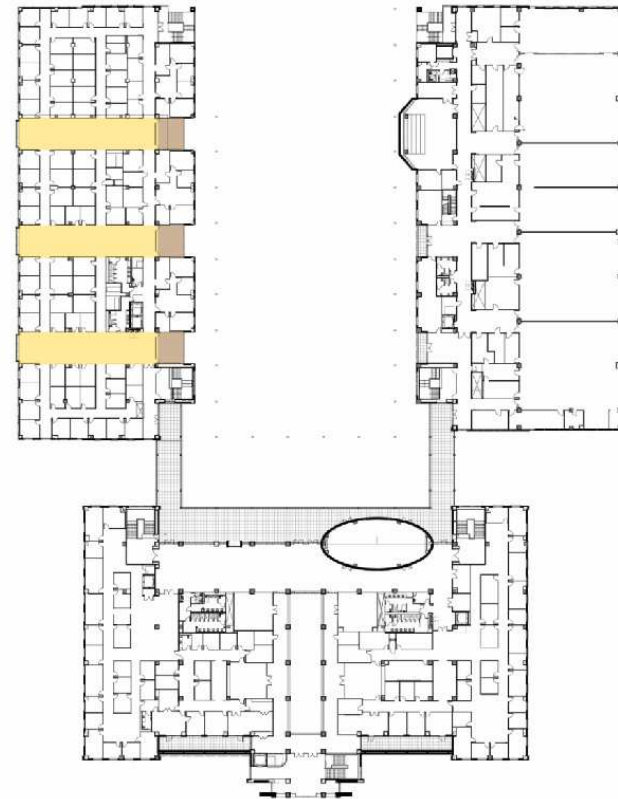


3<sup>rd</sup> floor





# Faculty Collaboration

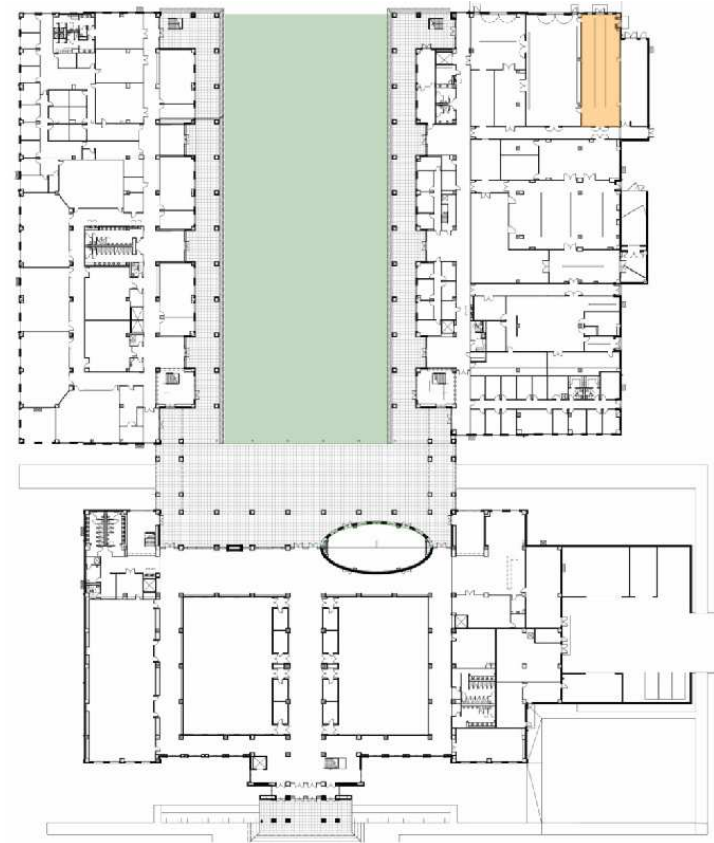


3<sup>rd</sup> floor





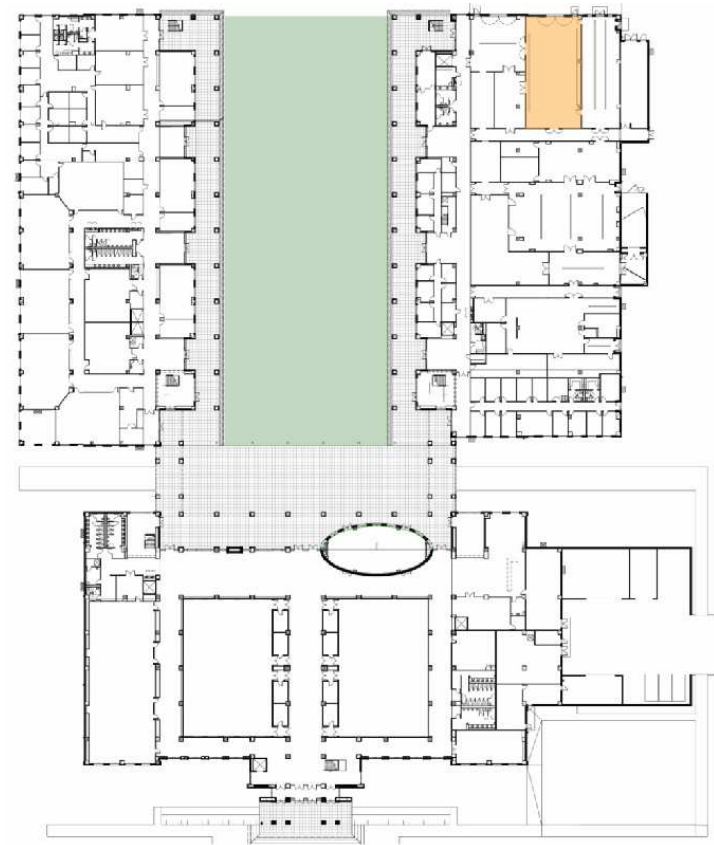
# Labs



1<sup>st</sup> floor



# Labs

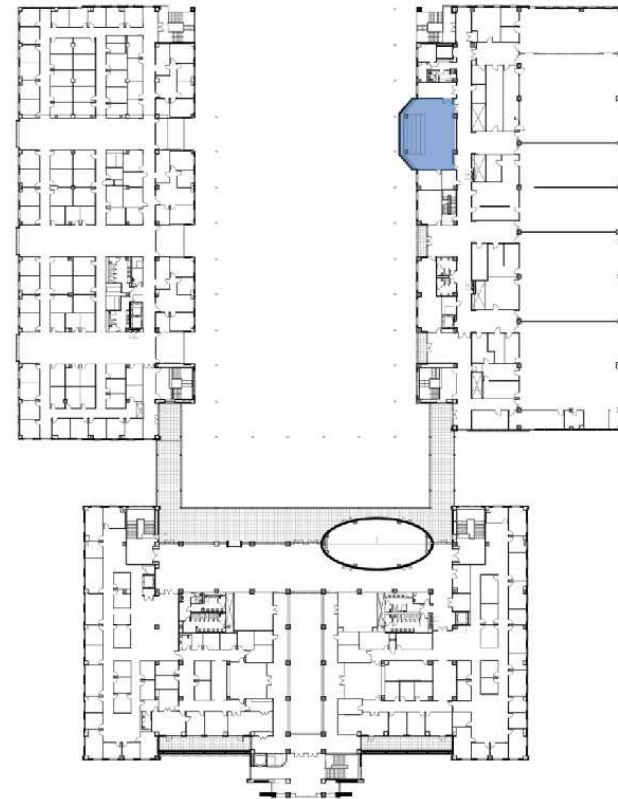


1<sup>st</sup> floor





## Labs Theater

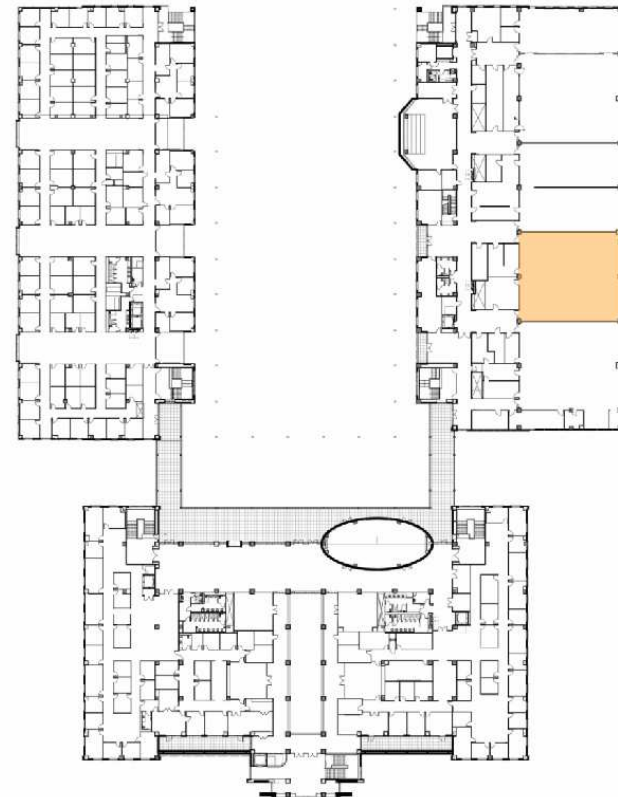


3<sup>rd</sup> floor





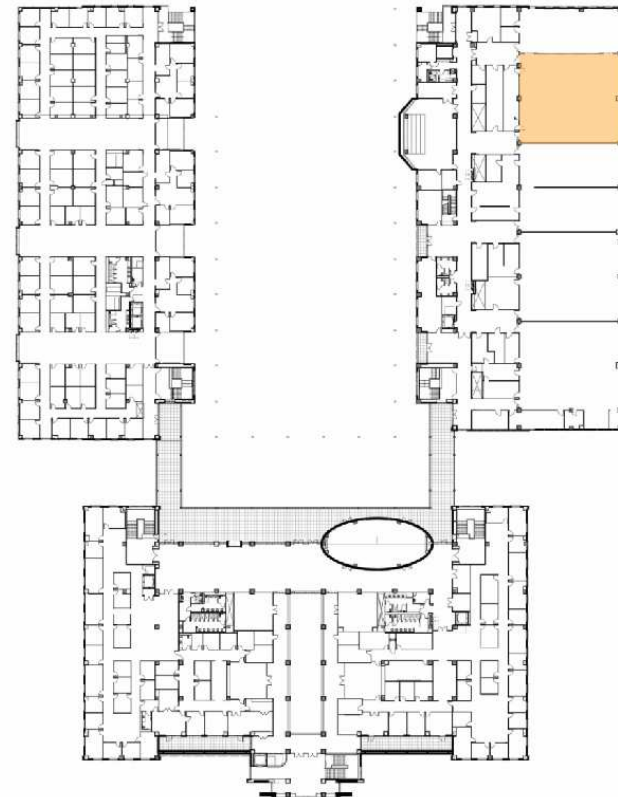
# Labs



3<sup>rd</sup> floor



# Labs

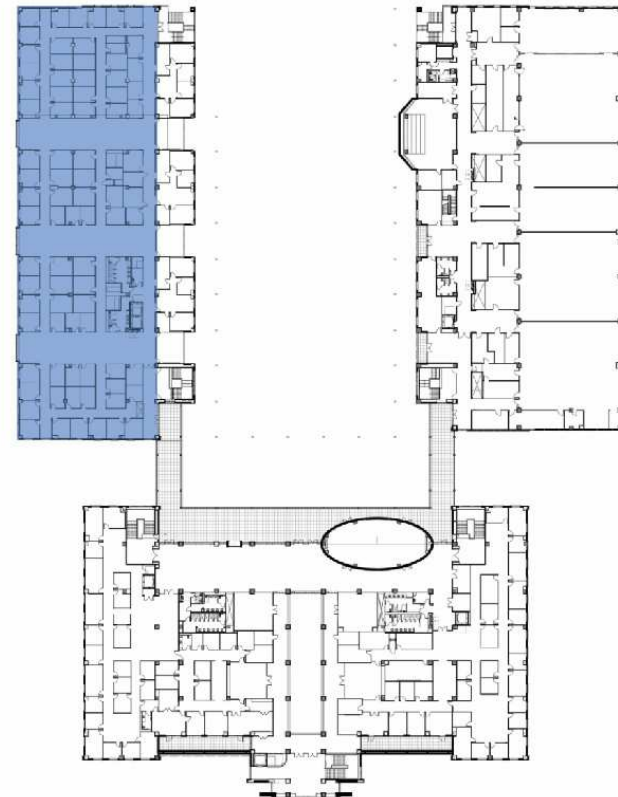


3<sup>rd</sup> floor



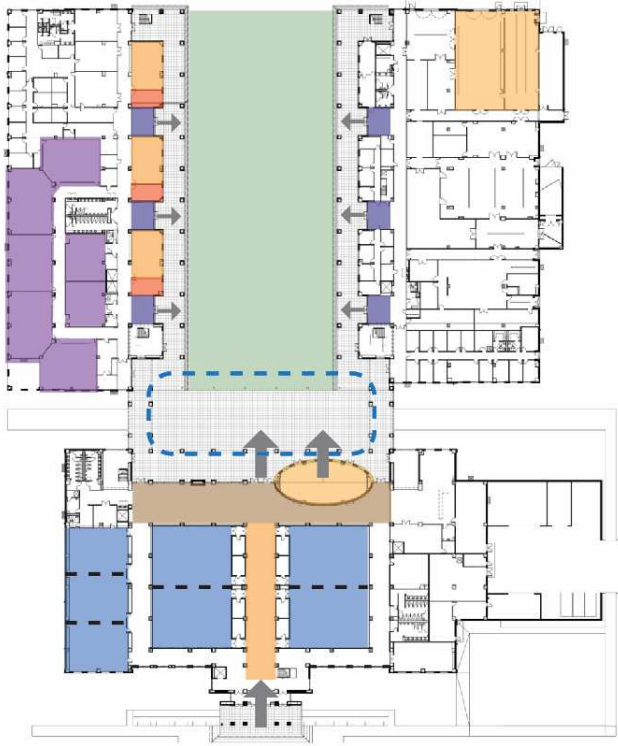


# Flexible Partitions

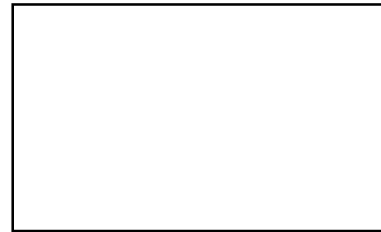


2<sup>nd</sup> floor

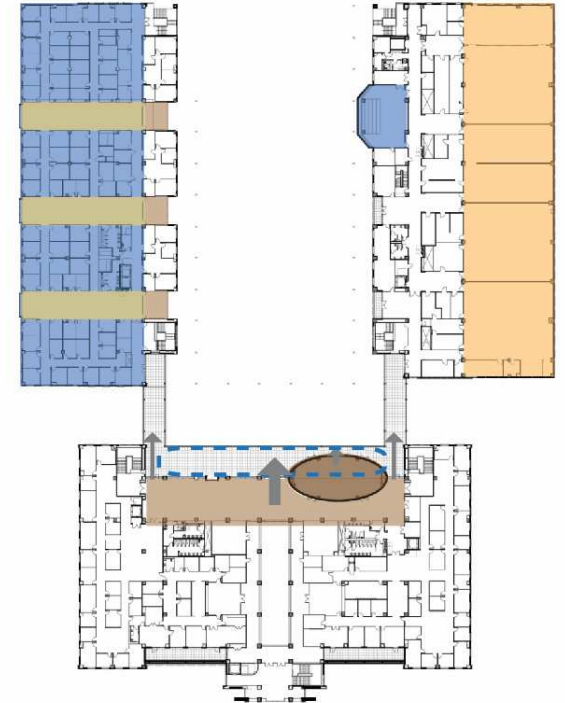




1<sup>st</sup> floor



2nd floor



3rd floor

## Question and Answer



*Managing Metamorphosis,  
Building for Change*



# Seminar Evaluation

*We hope you enjoyed this session...*

*Please take a moment to complete the evaluation form.*

*Thank you!*







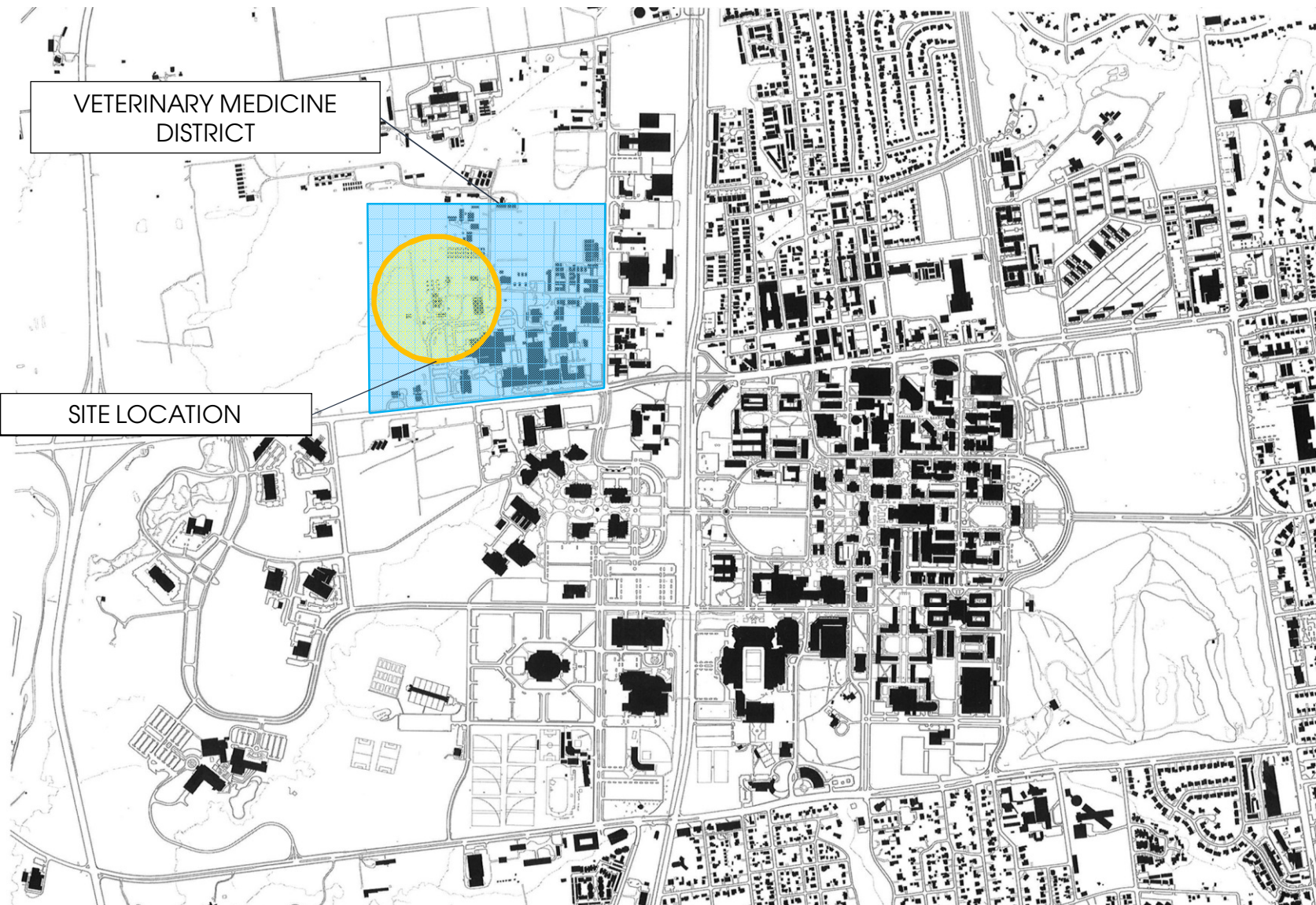


# Innovative

21<sup>st</sup> century tools and technology

Today's needs

Tomorrow's demands



## Site

Plan of  
campus and  
surrounding  
community





# Context

We don't want to repeat these research buildings.

