

# UGA Biological Science Building

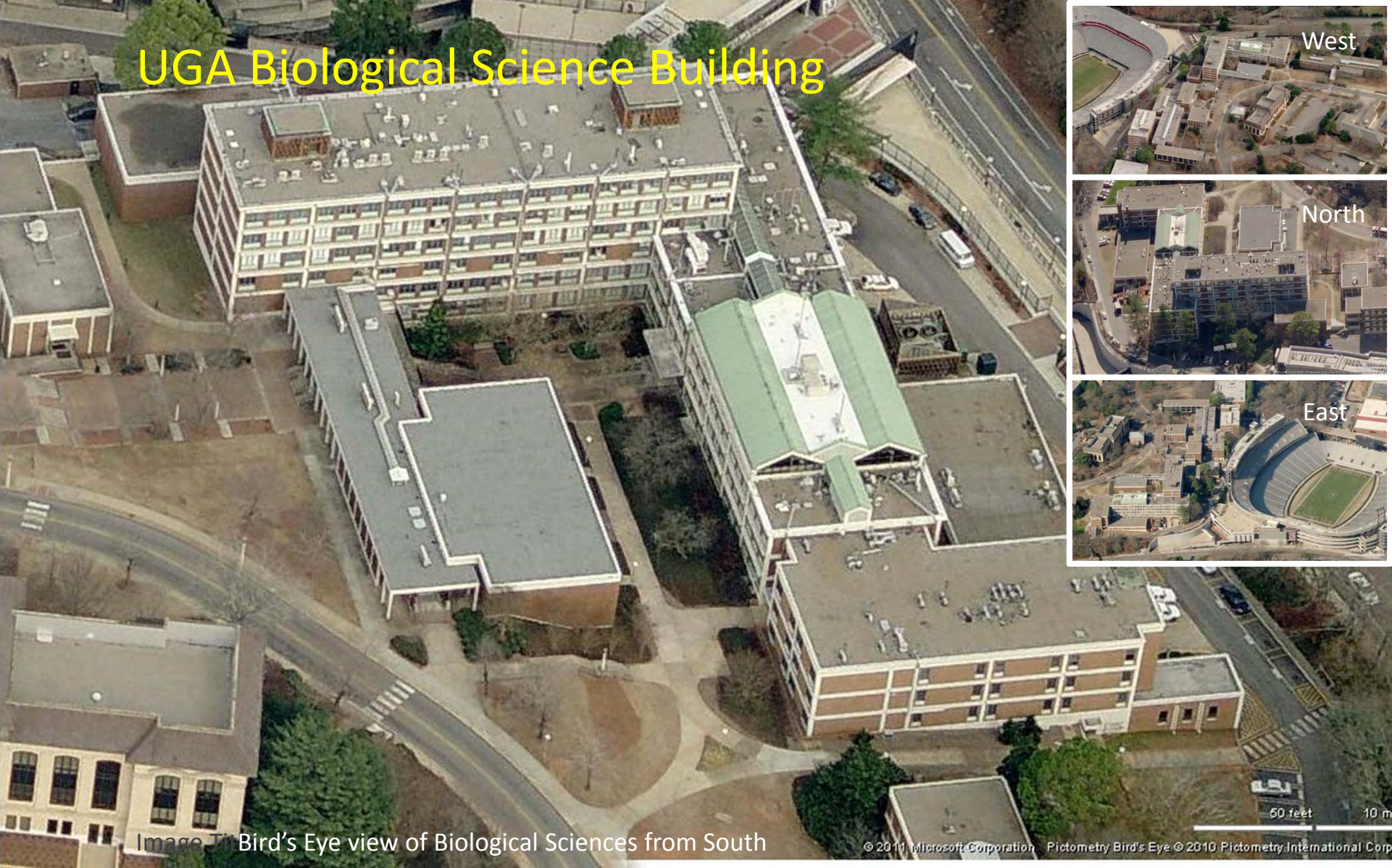


Image 10 Bird's Eye view of Biological Sciences from South

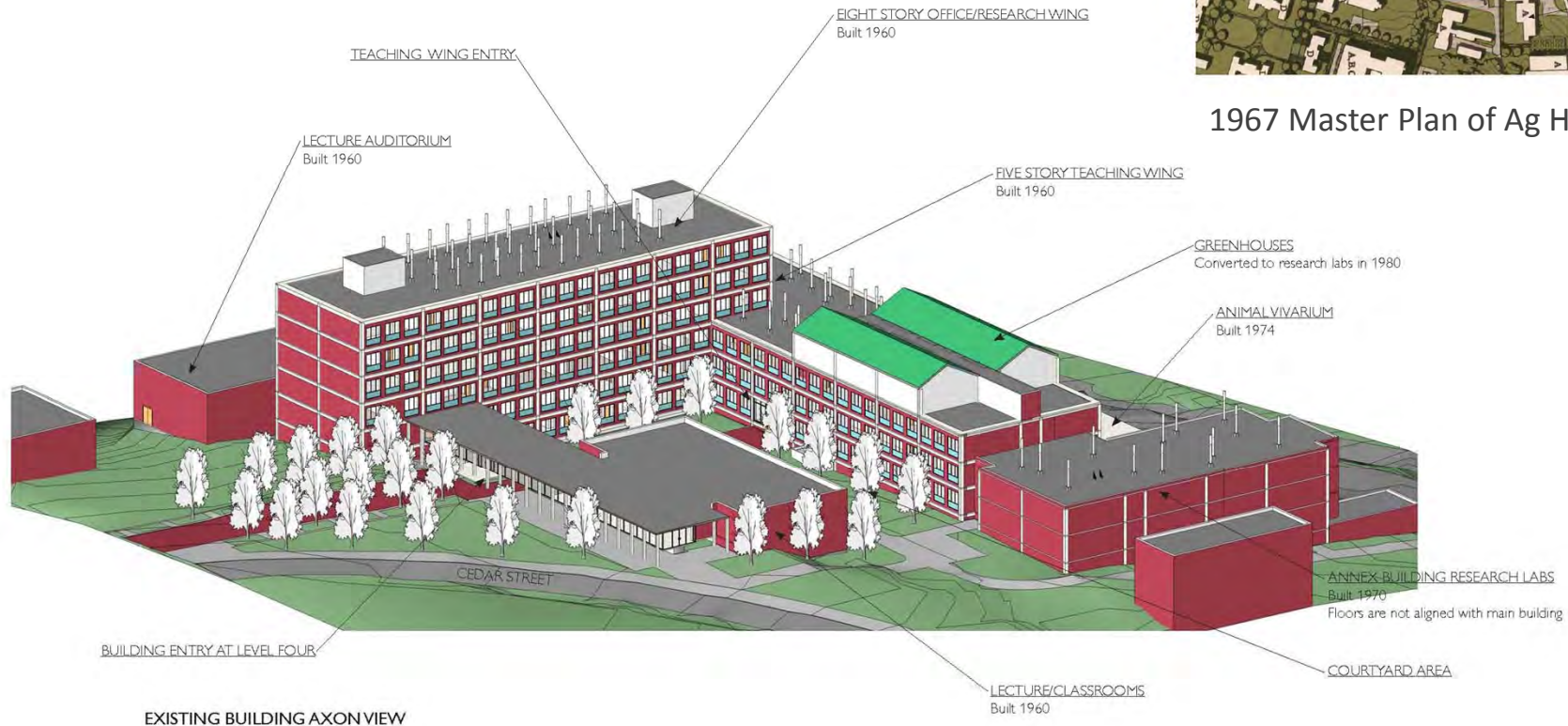


## Mid-20<sup>th</sup> Century Buildings Workshop

*Facility Officers Conference/ Columbus, Ga./ 26 October 2011*



# UGA Biological Science Building



1967 Master Plan of Ag Hill

Existing Building Layout viewed from Southwest



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# UGA Biological Science Building



Annex Building



Courtyard View



Main Building Entry Level Four

Existing Conditions Photos



Lab with Exposed Fan Coil Units



VIEW OF EXISTING LAB SPACE



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# UGA Biological Science Building

## STRUCTURE

- No visible signs of structural deterioration
- Column grid and spacing is conducive to modern open labs
- Design of frame will support typical live loads

## SKIN

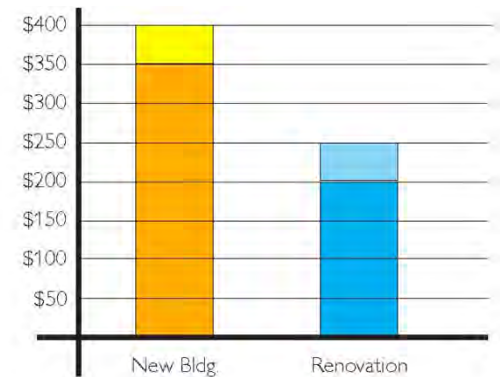
- Brick veneer with CMU backup
- Good condition overall, minimal work required
- Aluminum windows- need replacement

## MEP SYSTEMS

- Existing building system capacity has been far exceeded by demand of research program
- Expanded service needs provided by suspended fan coil units in labs
- Electrical service has expanded beyond original capacity and electrical panels are now located in the corridors

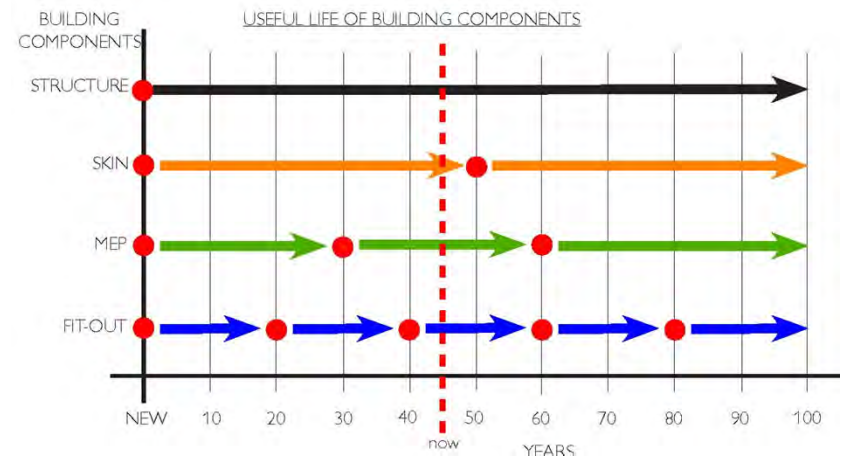
## LAB FIT-OUT

- Lab layout is inflexible
- Research needs have changed since this building was built
- Renovation for flexibility should be considered



COST COMPARISON		
	NEW BLDG.	RENOVATION
HOK Benchmark	\$350-400/sf	\$200-250/sf
Probable Construction Cost		\$225/sf *

\* Cost estimate is based on beginning work in 2007 with a phased construction schedule.

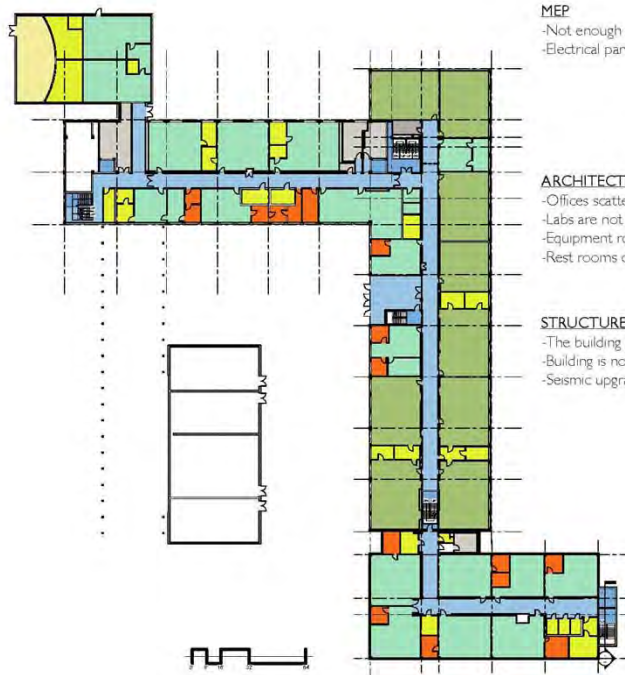


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# UGA Biological Science Building

CURRENT/PROPOSED LAYOUT  
LEVEL 3



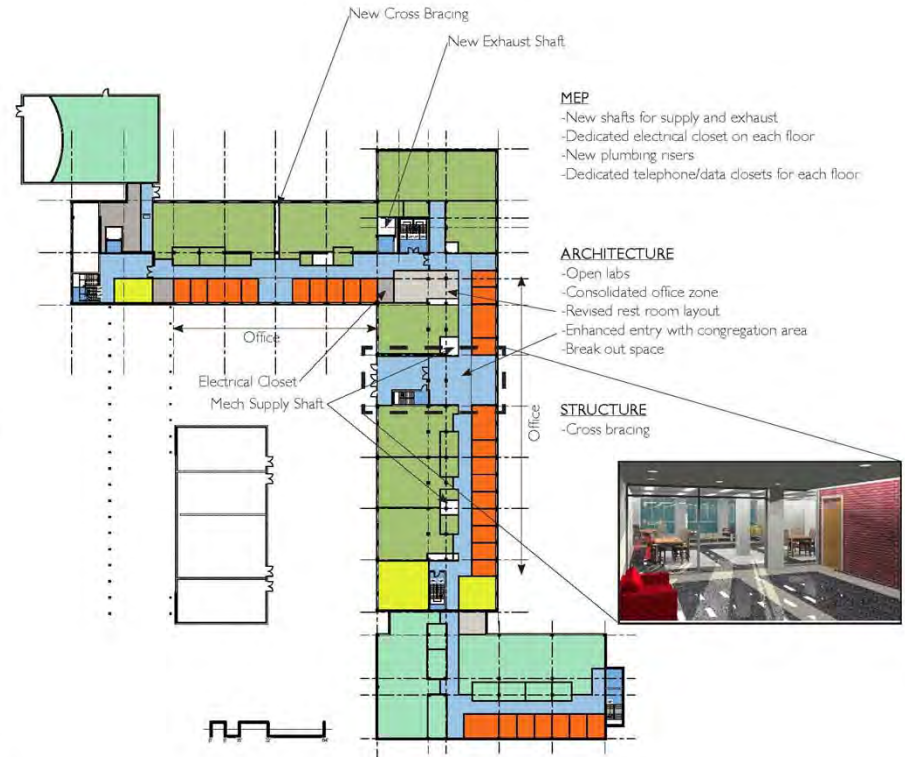
LEVEL 3 EXISTING LAYOUT

**MEP**  
-Not enough supply for mechanical or electrical  
-Electrical panels in corridors creates a safety hazard

**ARCHITECTURE**  
-Offices scattered around building  
-Labs are not contiguous  
-Equipment rooms scattered around building  
-Rest rooms do not meet access code

**STRUCTURE**  
-The building is currently designed for 100psf live load  
-Building is now in a more restrictive seismic zone  
-Seismic upgrades needed

- ADMINISTRATIVE OFFICE
- ANIMAL QUARTERS
- BUILDING SERVICES
- CIRCULATION
- FACULTY/POSTDOC/STUDENT OFFICE
- LECTURE/CONFERENCE
- MECHANICAL
- RESEARCH LAB
- SHARED EQUIPMENT/STORAGE
- TEACHING LAB
- VERT. CIRCULATION



LEVEL 3 PROPOSED LAYOUT

**MEP**  
-New shafts for supply and exhaust  
-Dedicated electrical closet on each floor  
-New plumbing risers  
-Dedicated telephone/data closets for each floor

**ARCHITECTURE**  
-Open labs  
-Consolidated office zone  
-Revised rest room layout  
-Enhanced entry with congregation area  
-Break out space

**STRUCTURE**  
-Cross bracing

Biological Sciences Building Renovation Feasibility Study

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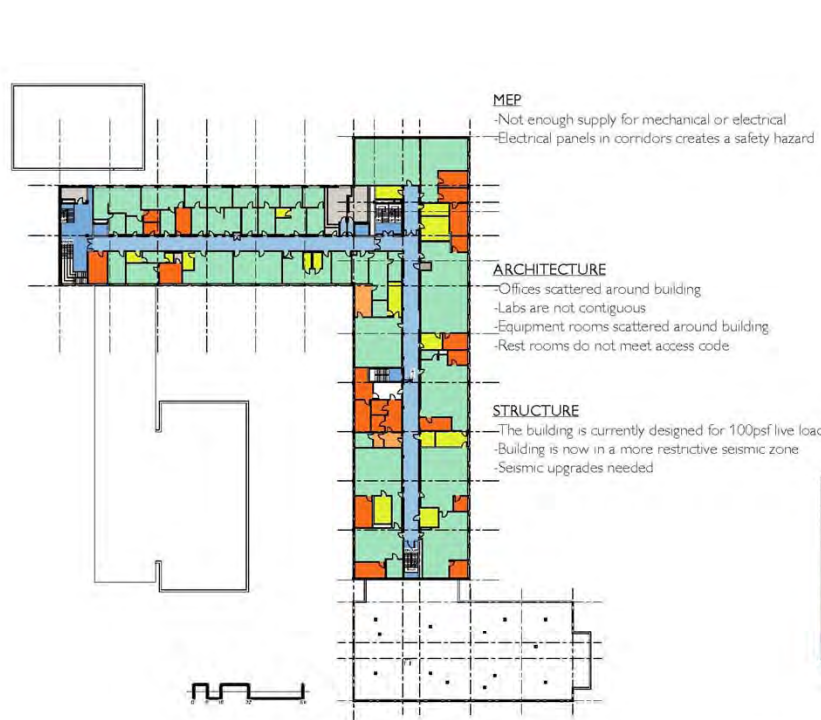


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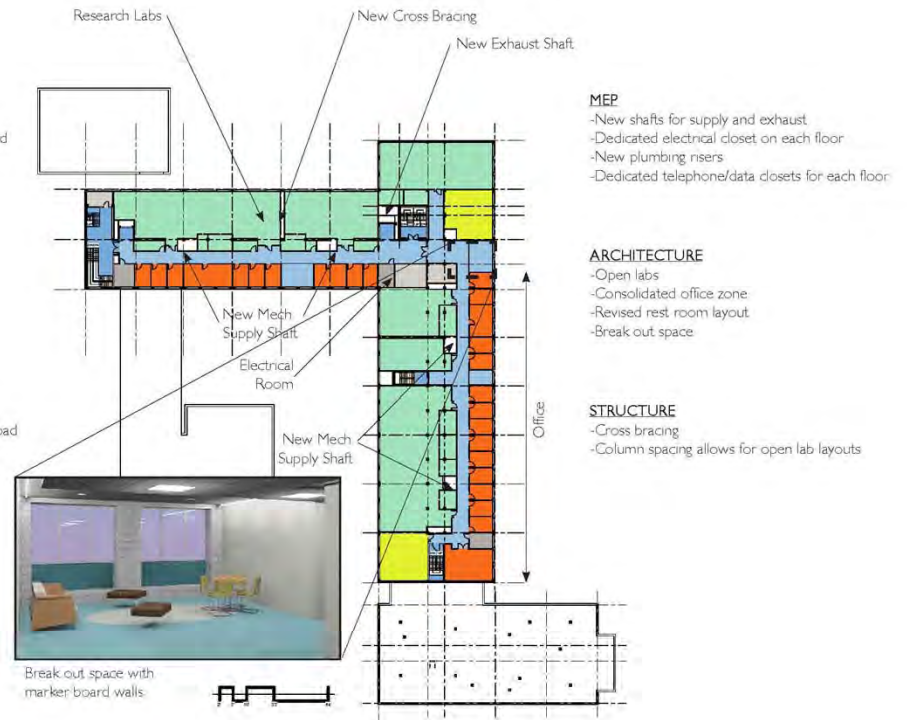
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# UGA Biological Science Building

CURRENT/PROPOSED LAYOUT  
LEVEL 5



LEVEL 5 EXISTING LAYOUT



LEVEL 5 PROPOSED LAYOUT

- ADMINISTRATIVE OFFICE
- ANIMAL QUARTERS
- BUILDING SERVICES
- CIRCULATION
- FACULTY/POSTDOC/STUDENT OFFICE
- LECTURE/CONFERENCE
- MECHANICAL
- RESEARCH LAB
- SHARED EQUIPMENT/STORAGE
- TEACHING LAB
- VERT. CIRCULATION

Biological Sciences Building Renovation Feasibility Study

12



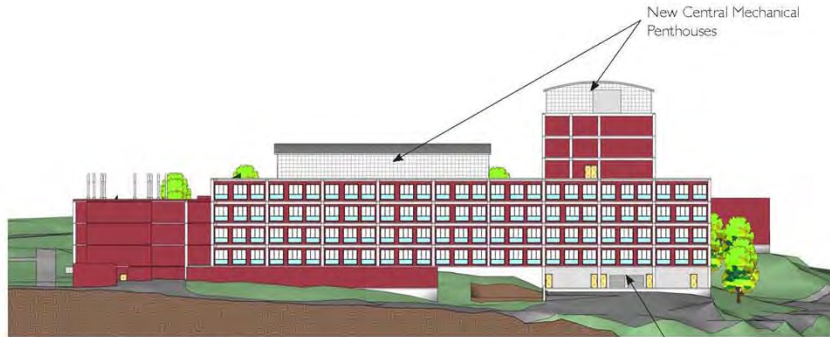
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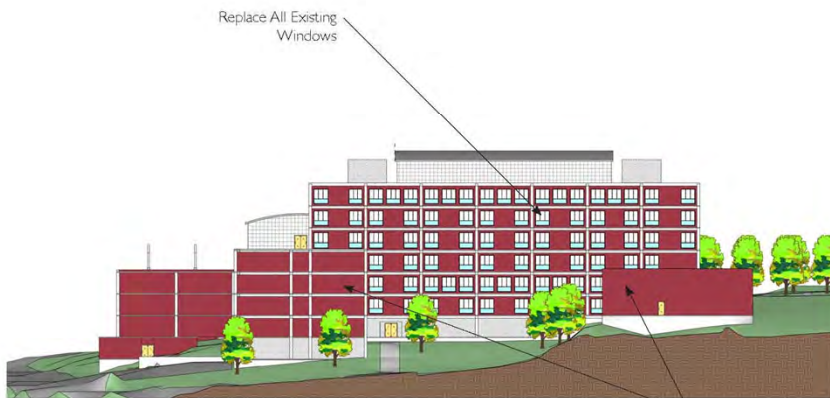
## BUILDING ELEVATIONS



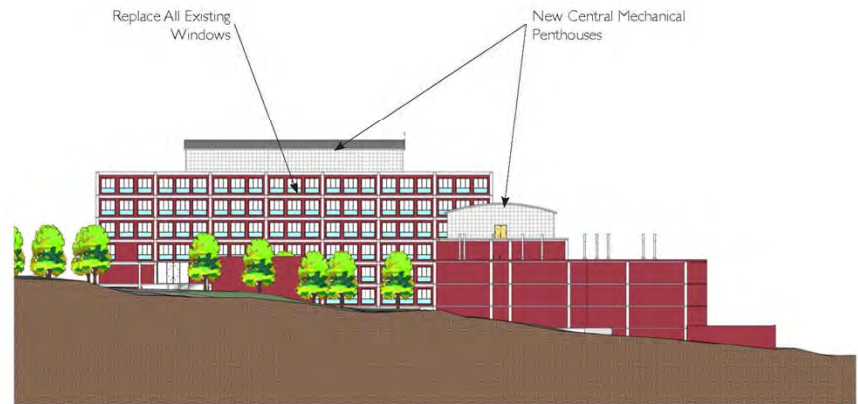
PROPOSED EAST ELEVATION



PROPOSED WEST ELEVATION



PROPOSED NORTH ELEVATION



PROPOSED SOUTH ELEVATION



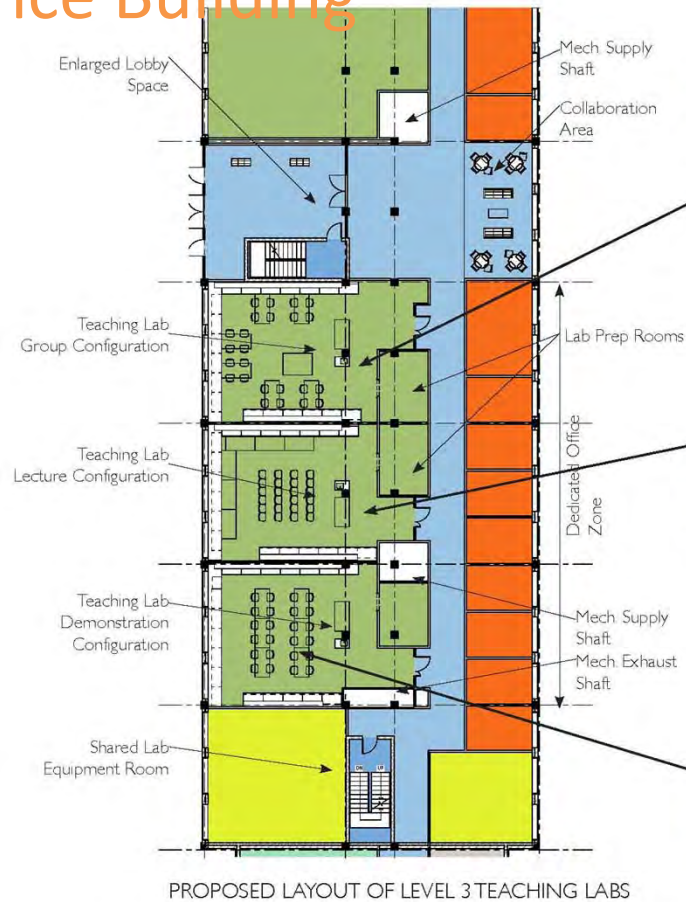
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# UGA Biological Science Building



VIEW OF PROPOSED LABS



TEACHING LAB GROUP CONFIGURATION



TEACHING LAB LECTURE CONFIGURATION



TEACHING LAB DEMONSTRATION CONFIGURATION

## ADVANTAGES OF PROPOSED LAYOUT

- Larger lab configurations possible
- Consolidation of office and equipment zones provide better HVAC distribution and a better layout
- Ease of conversion
- Areas of collaboration provide opportunities for discussion and interaction among students, teaching faculty and researchers
- Daylit corridors more visually interesting

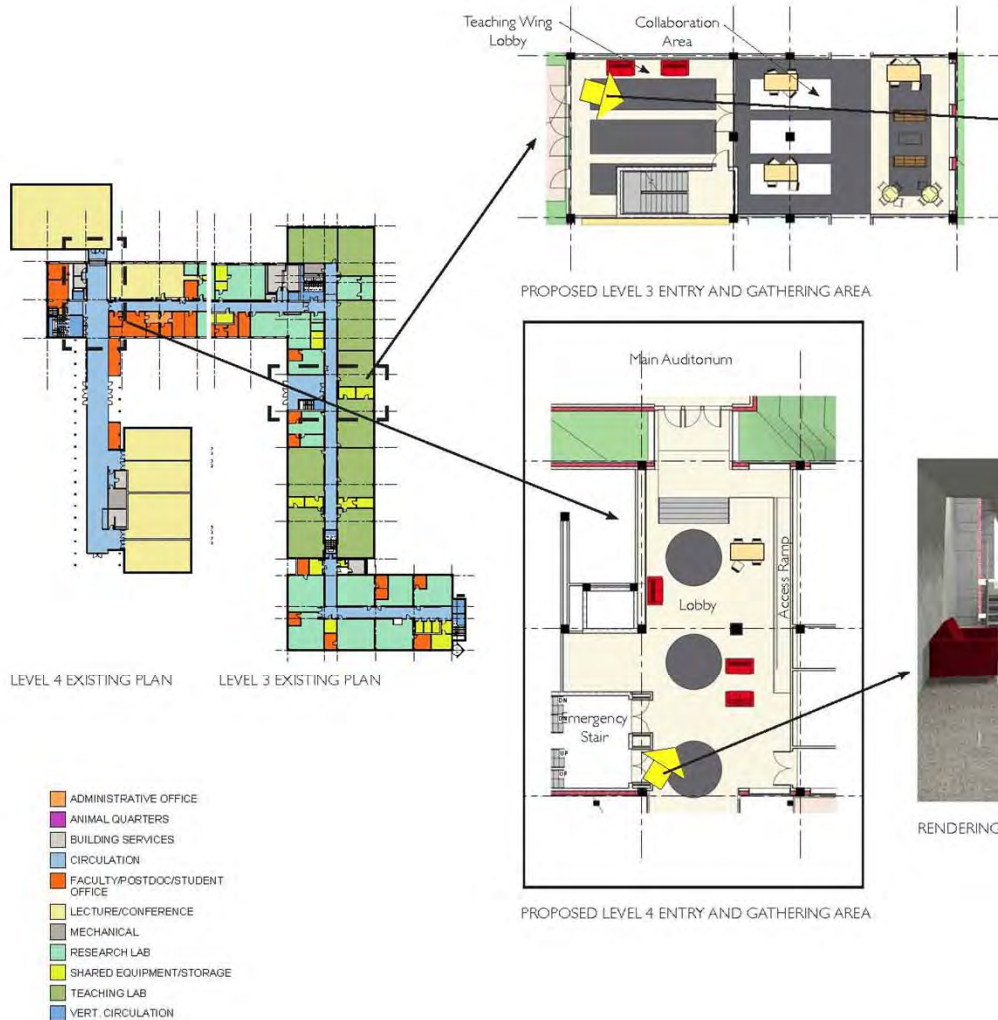


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PROPOSED ENTRY LOBBY LAYOUTS  
RENDERED VIEWS OF PROPOSED



RENDERING OF LEVEL 3 ENTRY AND GATHERING AREA



RENDERING OF LEVEL 4 ENTRY AND GATHERING AREA

*Biological Sciences Building Renovation Feasibility Study*

## Mid-20<sup>th</sup> Century Buildings Workshop

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# UGA Biological Science Building



Axon View of Proposed Building



## Mid-20<sup>th</sup> Century Buildings Workshop

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Dealing  
with the  
Campus  
high-rise

University of Georgia



# Modern Era High-rises

= challenges for campuses

Repair?

Replace?

Rebuild?





# Brumby Hall

## Existing Conditions Findings



### Brumby Hall

Built: 1966

#### General Information:

- Total Gross Square Feet: 210,484
- Square feet per Bed: 225
- 935 Beds: 1<sup>st</sup>-Year Women student-focused
- Nine floors: 1 - Student Services offices & 2-8 - residents
- Double-occupancy rooms with community bath per wing
- Structure: Concrete frame with brick veneer exterior & non-thermally broken windows

#### Findings:

- Well Maintained: No major Renovations/Upgrades, so starting to show typical signs of age
- Exterior Envelope & Roof: Water Infiltration issues
- Life Safety, ADA & Code issues: Upgrading required
- Structural Systems: No reported problems
- HVAC: Galvanized, 2-pipe system has corrosion issues
- Plumbing, Electrical & Fire Protection: Building systems require upgrading



# Positive issues associated with campus high-rises

Campus Cash Cows

Good use of campus space

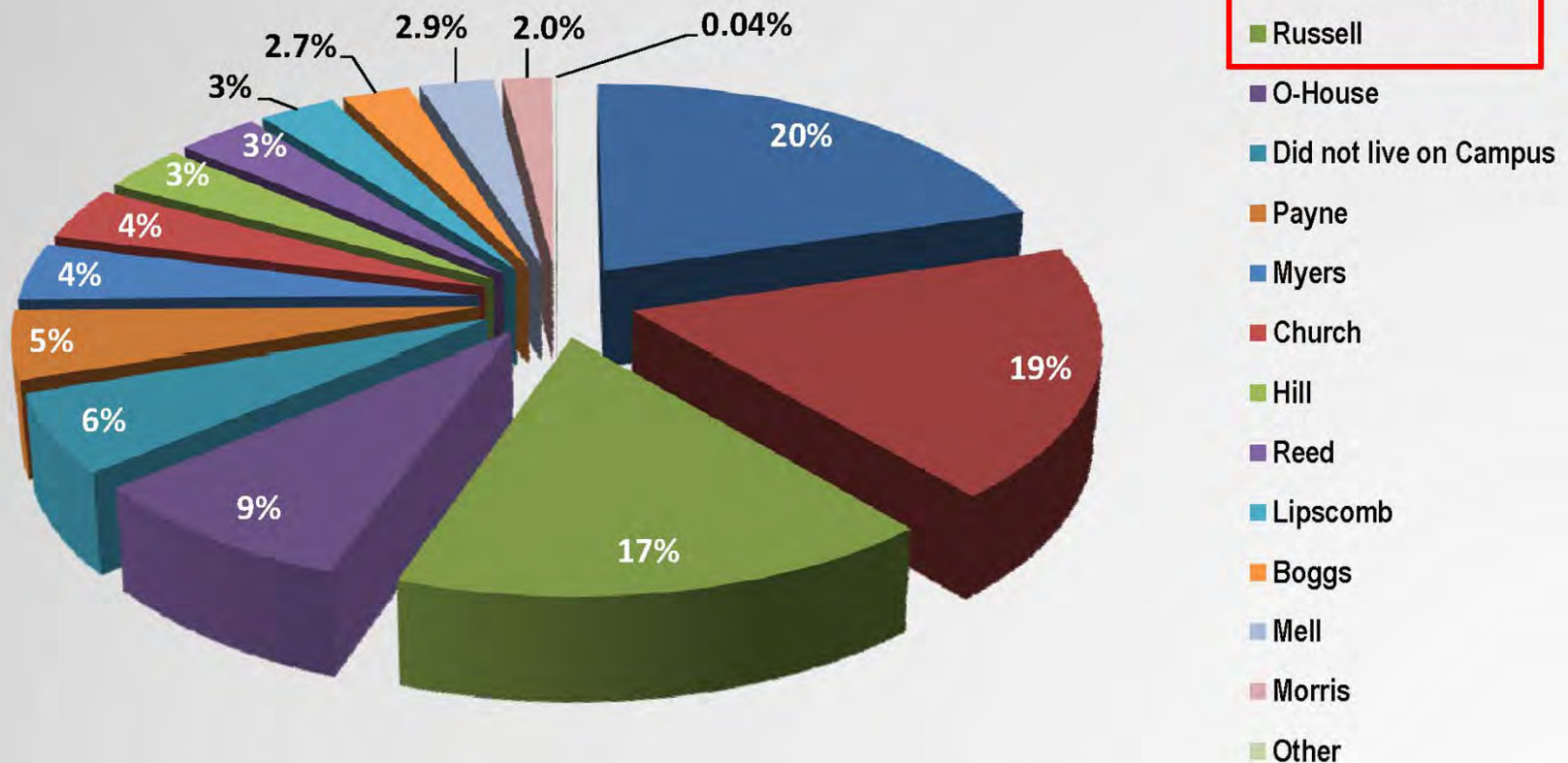
Popular communities





# Pros: high percentage of Students in B/C/R

Q4. Where did you live as a freshman while attending UGA (or this year if you are currently a freshman)? (n=763)



# PROS:



High Density of Students close to academic center of campus



# PROS:



Viabile Campus  
Communities and Traditional  
Connection for Alumni



# Cons:



Wear & tear to roofs & parapets



# Cons:



Figure M2



Figure M4



Figure M3



Figure M5



Figure M6



Figure M7



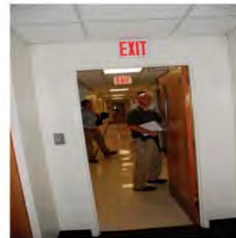
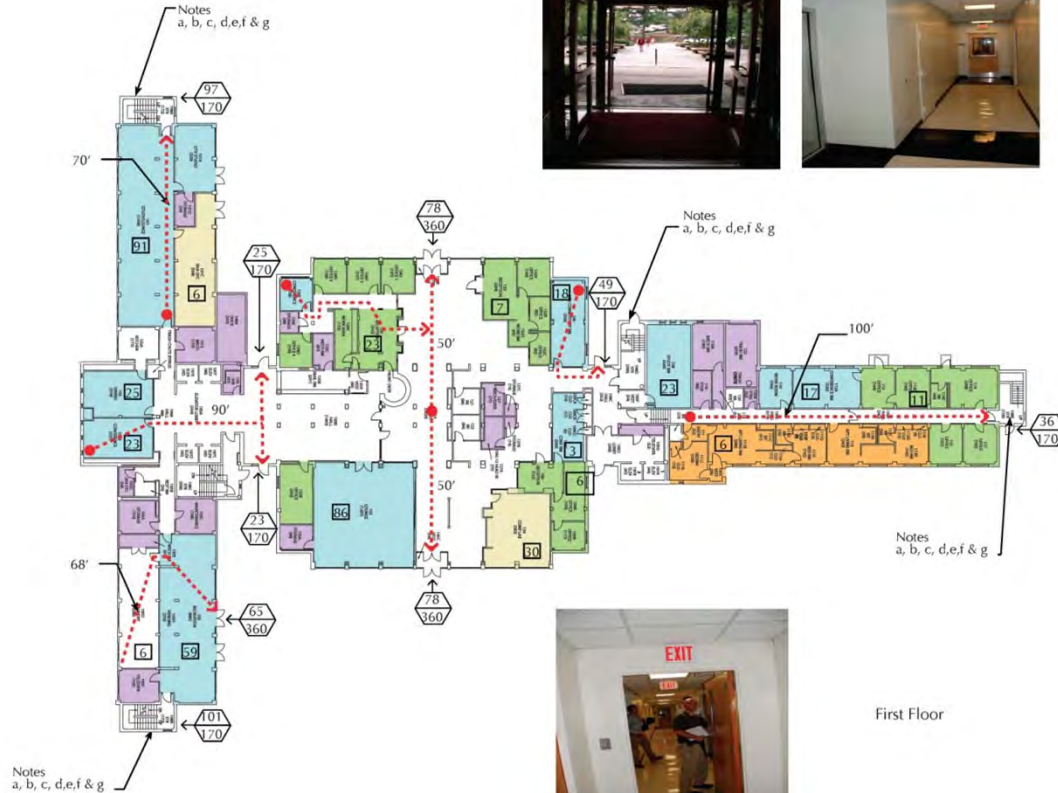
Figure M8

Mechanical, Electrical, Plumbing

# Cons:

## 3.5.1 Code & Life Safety

### Creswell Hall



First Floor



# Life Safety



# Cons:



OLD



NEW

Can they compete with New Dorms?

# The Financial Side

## Financial Analysis

### General Assumptions

- Exp. & Rev. Assumptions
  - Actuals: 2007-2009
  - 2009-10 Actuals to Q3
  - YTD % of Total 2010: 75%
  - Projections for 2011-2021
  - Projections based on 2009-10
- Inflation Assumptions
  - Expense: 3.5%
  - Revenue: 4.0%
- Capital Expenditures
  - Planned B/C/R Expenditures Not Included
  - 2010-11: \$6.2 Million
- Debt Assumptions
  - 2010 Actuals Projected Forward



# The Financial Side

## Financial Analysis

### Current Condition Projected to 2020-21

#### ▪ 2010-11:

- Revenue: \$39.4 Million
- Expense: \$27.2 Million
- NOI: \$12.1 Million
- Debt PMT: \$10.2 Million
- DCR = 1.19
- DSR = 1.66
- Cash Flow: \$1.9 Million

#### ▪ 2020-21:

- Revenue: \$58.2 Million
- Expense: \$38.9 Million
- NOI: \$19.3 Million
- Debt PMT: \$11.2 Million
- DCR = 1.72
- DSR = 2.37
- Cash Flow: \$8.1 Million

# The Financial Side

## Financial Analysis

### Financial Capacity for Renovations

#### No Rate Premium for B /C /R

- 2013-14 Est. Cash Flow
  - \$2.45 Million
- B /C /R Rate per Bed
  - \$5,010 per Year
- Available Cash for Reno (maintaining a 1.1 DCR)
  - \$1.3 Million
- Available Debt Capacity
  - **Total: \$18.3 Million**
  - 30-year Term @ 6.0%
- Renovation Funding Capacity
  - \$29.00 per SF
  - \$6,350 per Bed



# The Financial Side

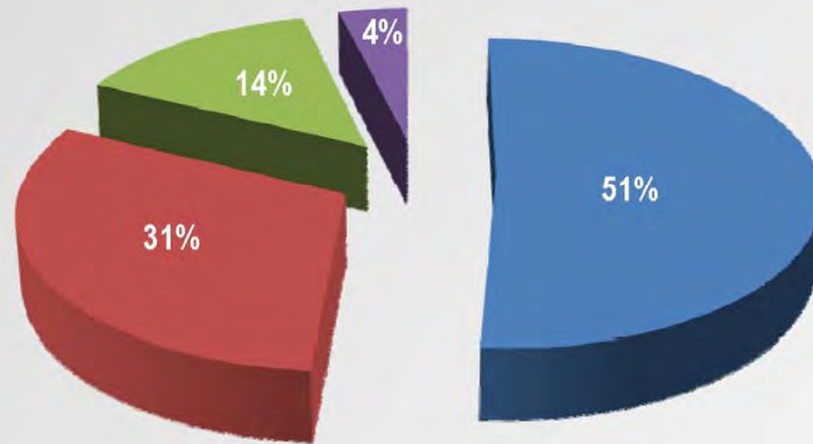
= prohibitively expensive to renovate or rebuild without raising rents



# Are Students Willing to Pay??

## Willingness to Pay a Premium for Renovations

(n=754)



■ No Premium ■ up to 10% or \$443 ■ up to 20% or \$886 ■ over 21% or over \$930



# Preservation



Significant Architecture...



Significance????

How much should we as campus architects respect these less significant structures?

# Preservation



Can we  
improve upon  
modern  
architecture?





# Future of the High-rise

