











OPTIMIZE TO MAXIMIZE

To strategically improve something in order to achieve the greatest possible outcome.

Building performance

Student experience

Right Sizing

Modernization

Deferred maintenance

Enhance comfort

Environmental footprint

What does that mean for a campus building renovation?



University of Kentucky White Hall

- Built: 1967-1969
- 155,000 gsf
- 57 Classrooms
- \$58M Construction Cost
 \$80M Total Project Budget

Needs

Infrastructure

Site

Pedagogy

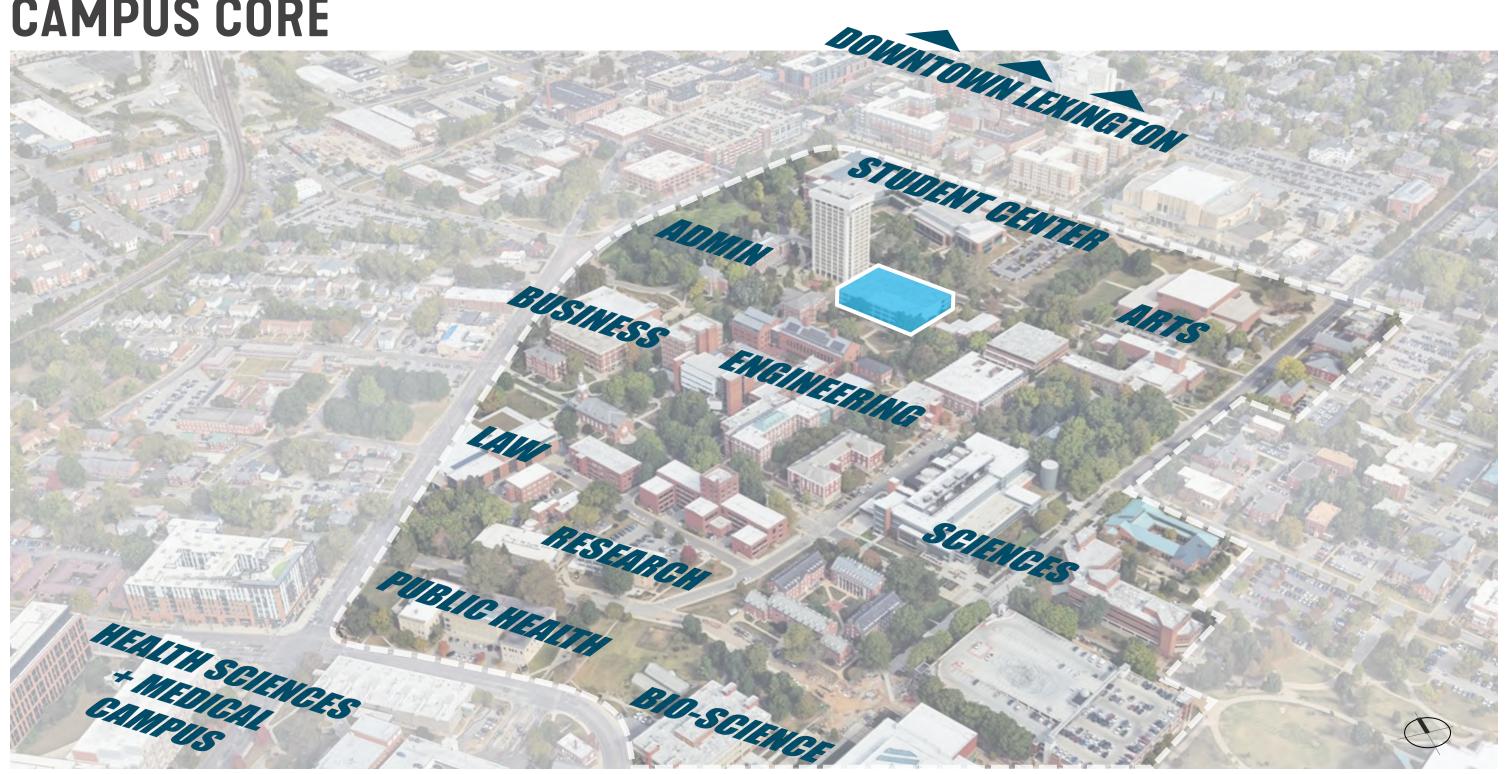
Technology

Building Envelope

STUDENT EXPERIENCE

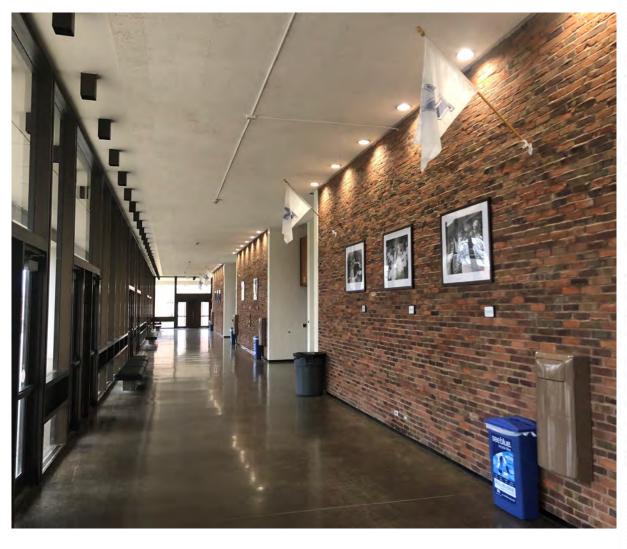


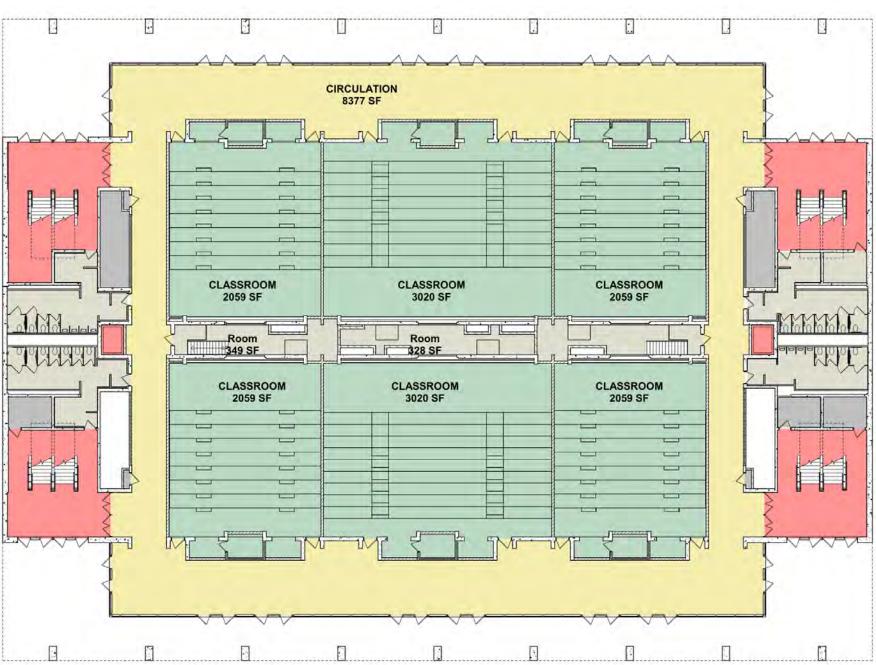
CAMPUS CORE



EXISTING CONDITIONS

FIRST FLOOR



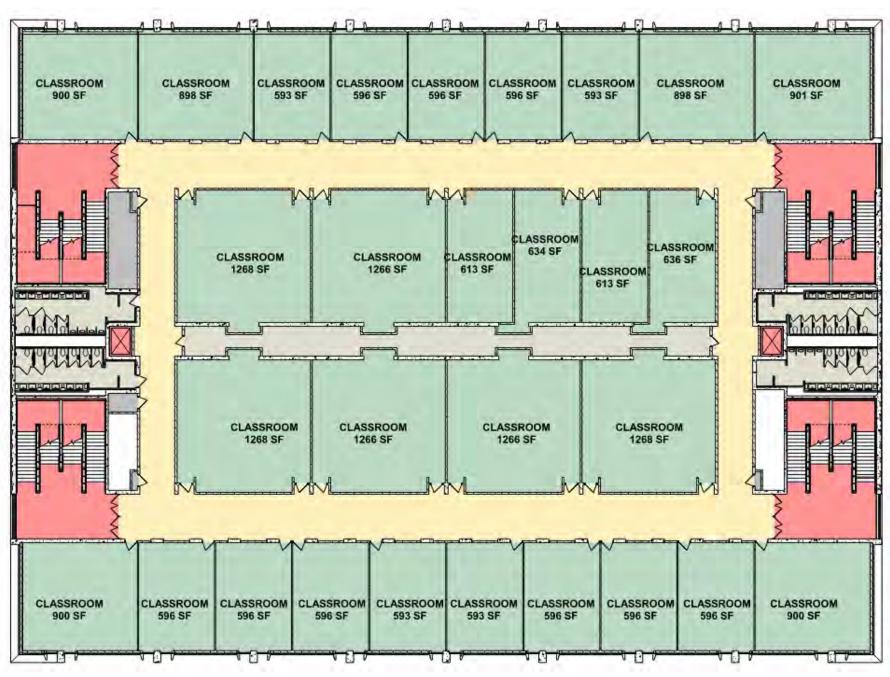


EXISTING CONDITIONS

SECOND (& THIRD) LEVEL







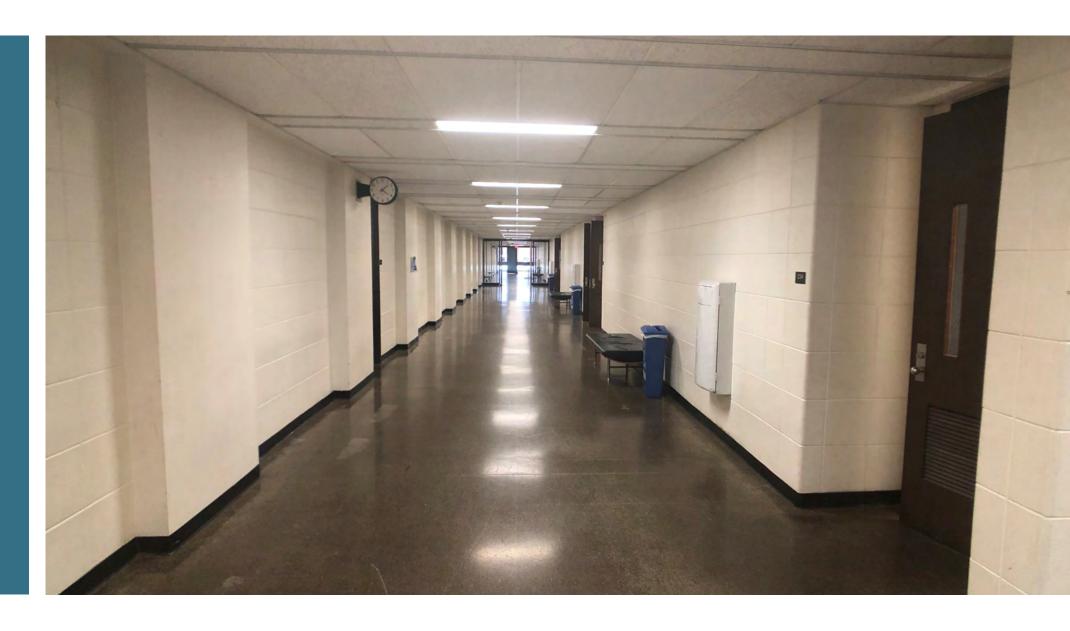
EXISTING CONDITIONS

NO VISIBILITY INTO CLASSROOMS

THE HIGH SCHOOL VIBE

VERY LITTLE
COLLABORATION OR
STUDY SPACE

MOST CLASSROOMS NOT CONDUCIVE TO ACTIVE LEARNING



LEARNING OBJECTIVES

- OPTIMIZE SCOPE. Widening a project scope to include a deeper understanding of existing campus assets can provide key data that influences the approach to the project at hand.
- OPTIMIZE BUDGET. Early cost modeling & visioning gives clients a clear understanding of budget to prioritize needs during design and is a framework to guide decision making.
- MAXIMIZE IMPACT. Focus on the elements and implementation on items that have the largest effect on students to improve their learning experience.

OPTIMIZE SCOPE

Widening a project scope to include a deeper understanding of existing campus assets can provide key data that influences the approach to the project at hand.

THE NEED TO BE SPECIFIC

RULES OF THUMB, GENERIC METRICS AREN'T THE STARTING POINT

WHAT INFORMS THE PROGRAM?

- Is it one for one quantitative replacement?
- Projecting a future state?
- Is there room for adding student collaboration/study space?

WHAT ARE THE PEDAGOGICAL NEEDS?

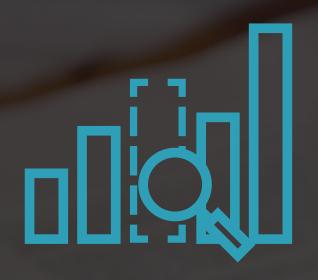
- AV/IT updates
- Teaching & learning styles

- WHAT IS THE CAMPUS-WIDE IMPACT OF TAKING DOWN WHITE HALL FOR CONSTRUCTION?

WHO?

- Office of the Registrar**
- Enrollment
- Provost
- Finance & Administration
- Campus Planning & Space Mgmt
- Planning Design & Construction
- Faculty Advising

UNDERSTANDING THE BIGGER PICTURE FIRST



How well are we using our classrooms today?



How many classrooms (and seats!) do we need for current and future enrollments?



How can we meet these needs while improving the physical learning environments?

CLASSROOM UTILIZATION | MAIN CAMPUS

CURRENT STATE

Region	No. of Rooms	No. of Seats	Average Room Size	Average ASF per Station	Average Section Size	Weekly Seat Hours	Average Weekly Room Hours	n Seat Fill Rate
Academic Core	184	11,464	1,050	16.8	34	16.3	25.6	61%
Agriculture Campus	38	1,799	797	16.8	25	14.5	25.5	59%
Central Campus	27	901	848	25.4	18	10.5	15.8	71%
North Campus	26	597	505	22.0	15	10.9	13.4	69%
UK Healthcare Campus	56	3,380	996	16.5	22	5.1	7.4	52%
West Campus	24	884	685	18.6	15	8.4	16.7	45%
Wildcat Sports & Recreation	5	156	549	17.6	18	18.7	24.4	58%
Total No. of Rooms = 360 Total No. of Stations = 19,181		AVERAGE Total ASF	929 334,470	17.4	27	13.3	20.5	60%

CLASSROOM UTILIZATION | ACADEMIC CORE

CURRENT STATE

Building	No. of Rooms	No. of Seats	Average Room Size	Average ASF per <i>F</i> Station	Average Section Size	Weekly Seat Hours	Average Weekly Room Hours	Seat Fill Rate
Anderson Mech Eng	5	202	1,249	30.9	18	14.7	24.2	61%
Barker Hall	6	188	744	23.7	17	11.2	19.1	58%
Business Econ	22	1,765	1,824	22.7	48	18.9	32.2	60%
Chemistry-Physics	13	1,135	1,237	14.2	52	14.4	20.8	56%
F. Paul Anderson Tower	7	284	700	17.2	22	18.3	33.6	51%
Fine Arts Guignol	7	236	616	18.3	18	12.7	22.8	55%
Grehan Building	2	80	620	15.5	9	3.0	8.1	31%
Jacobs Science Building	14	968	1,505	21.8	45	24.6	35.0	71%
Kastle Hall	3	260	1,043	12.0	53	18.9	25.8	52%
King Library	2	244	665	5.5	10	1.0	12.5	21%
Lafferty Hall	2	121	983	16.2	27	10.4	24.7	42%
Little Fine Arts Library	7	230	672	20.5	15	12.8	18.8	56%
Main Building	2	48	575	24.0	0	0.0	0.0	0%
McVey Hall	4	84	720	34.3	6	4.2	4.1	45%
Memorial Hall	1	705	4,108	5.8	0	0.0	0.0	0%
Miller Hall	1	30	470	15.7	24	14.2	24.9	57%
Mining/Minerals Building	2	90	725	16.1	17	10.0	26.5	38%
Oliver H. Raymond CE	2	68	702	20.6	18	6.8	15.3	55%
Patterson Tower	11	311	476	16.8	18	16.1	24.4	64%
Pence Hall	3	160	923	17.3	25	10.5	10.0	52%
Research Facility #1	3	80	617	23.2	15	8.0	13.5	56%
Robotics Facility	2	92	1,360	29.6	25	12.9	20.5	56%
Slone Research Building	1	99	1,240	12.5	53	15.2	29.0	52%
T H Morgan Bio-Sci	5	599	1,265	10.6	61	15.3	16.4	58%
White Hall	57	3,385	913	15.4	40	20.2	29.6	66%
Total No. of Rooms = 184		AVERAGE	1,050	16.8	34	16.3	25.6	61%
Total No. of Stations = 11,464		Total ASF	•	10.0	5 -7	10.0	25.5	(3178)

CLASSROOM UTILIZATION – MAIN CAMPUS

CURRENT STATE

	Mon	day	Tues	sday	Wedn	esday	Thur	sday	Fric	day	Aver	age
Time of Day	Rooms in Use	% In Use	Rooms in Use	% In Use	Rooms in Use	% In Use	Rooms in Use	% In Use	Rooms in Use	% In Use	Rooms in Use	% In Use
8:00 AM	34	9%	73	20%	39	10%	74	20%	33	9%	51	14%
9:00 AM	168	45%	261	70%	173	46%	262	70%	137	37%	200	54%
10:00 AM	220	59%	266	71%	230	61%	262	70%	192	51%	234	63%
11:00 AM	223	60%	257	69%	236	63%	263	70%	190	51%	234	63%
12:00 PM	161	43%	264	71%	167	45%	266	71%	138	37%	199	53%
1:00 PM	194	52%	250	67%	203	54%	253	68%	146	39%	209	56%
2:00 PM	168	45%	221	59%	166	44%	228	61%	79	21%	172	46%
3:00 PM	144	39%	231	62%	136	36%	232	62%	27	7%	154	41%
4:00 PM	102	27%	131	35%	113	30%	131	35%	14	4%	98	26%
5:00 PM	58	16%	54	14%	61	16%	51	14%	1	0%	45	12%
6:00 PM	40	11%	67	18%	58	16%	60	16%	0	0%	45	12%
7:00 PM	25	7%	37	10%	35	9%	29	8%	0	0%	25	7%

Total classrooms = 374

(Darker colors indicate a large percentage of rooms are scheduled.)

CLASSROOM UTILIZATION – WHITE HALL

CURRENT STATE

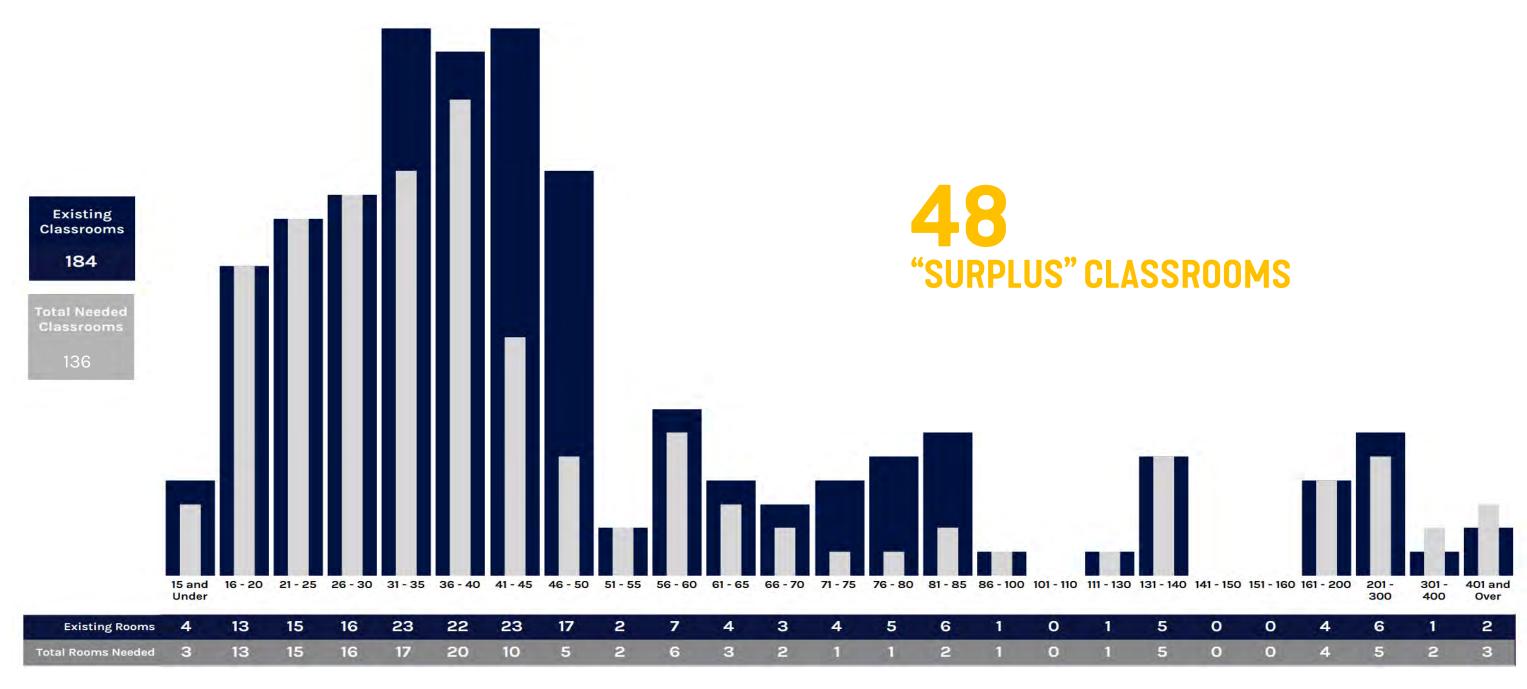
	Mon	nday	Tues	sday	Wedn	esday	Thur	sday	Fric	day	Ave	rage
Time of Day	Rooms in Use	% In Use										
8:00 AM	8	14%	17	30%	8	14%	17	30%	6	11%	11	20%
9:00 AM	37	65%	56	98%	39	68%	57	100%	33	58%	44	78%
10:00 AM	48	84%	56	98%	53	93%	56	98%	49	86%	52	92%
11:00 AM	49	86%	56	98%	53	93%	56	98%	53	93%	53	94%
12:00 PM	41	72%	56	98%	45	79%	56	98%	43	75%	48	85%
1:00 PM	51	89%	56	98%	55	96%	56	98%	46	81%	53	93%
2:00 PM	36	63%	51	89%	32	56%	50	88%	20	35%	38	66%
3:00 PM	30	53%	53	93%	21	37%	51	89%	6	11%	32	56%
4:00 PM	18	32%	24	42%	13	23%	21	37%	0	0%	15	27%
5:00 PM	8	14%	4	7%	8	14%	6	11%	0	0%	5	9%
6:00 PM	4	7%	8	14%	6	11%	10	18%	0	0%	6	10%
7:00 PM	1	2%	6	11%	3	5%	6	11%	0	0%	3	6%

Total classrooms = 57

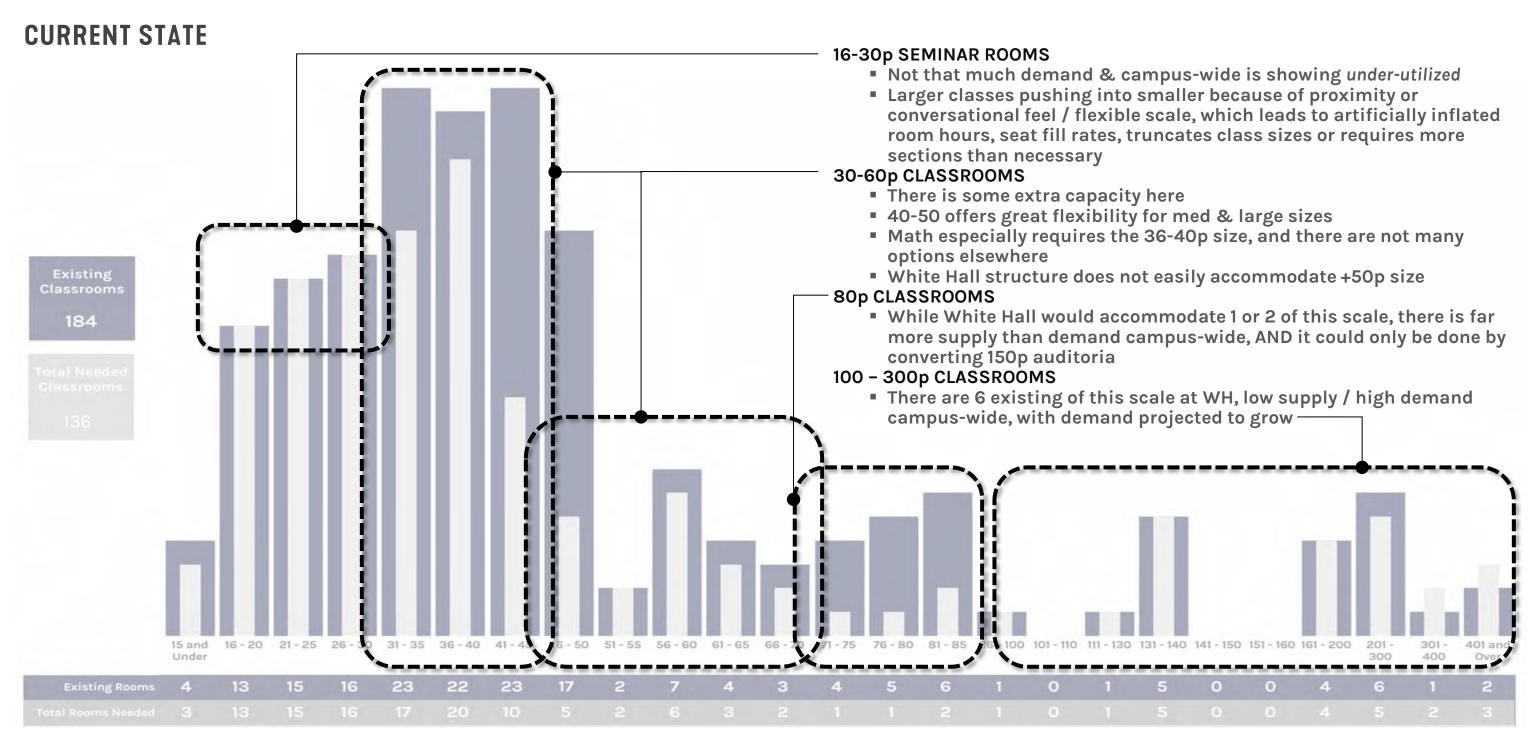
(Darker colors indicate a large percentage of rooms are scheduled.)

CLASSROOM MIX ANALYSIS FOR ACADEMIC CORE

CURRENT STATE | INCREASED UTILIZATION



CLASSROOM MIX ANALYSIS FOR ACADEMIC CORE



ACADEMIC CORE – A MOVING TARGET



RUNNING SCENARIOS

BUSINESS AS USUAL | MAIN CAMPUS

Capacity Group	Current Existing	Current Needed	Current S/D	
l5 and Under	29	23	6	
6 - 20	27	27	0	
21 - 25	34	29	5	
26 - 30	44	22	22	
31 - 35	46	26	20	
36 - 40	38	31	7	
41 - 45	30	30	0	
46 - 50	29	34	(5)	
51 - 55	4	8	(4)	
56 - 60	12	17	(5)	
61 - 65	4	8	(4)	
66 - 70	7	12	(5)	
71 - 75	6	11	(5)	
76 - 80	6	8	(2)	
81 - 85	6	8	(2)	
86 - 100	2	5	(3)	
101 - 110	1	3	(2)	
111 - 130	7	14	(7)	
131 - 140	7	10	(3)	
141 - 150	2	3	(1)	
151 - 160	1	2	(1)	
161 - 200	6	9	(3)	
201 - 300	9	13	(4)	
301 - 400	1	2	(1)	
401 and Over	2	3	(1)	
TOTALS	360	358	2	

RUNNING SCENARIOS

INCREASED UTILIZATION | MAIN CAMPUS

Capacity Group	Current Existing	Current Needed	Current S/D	S/D w/o White Hal	S/D w/o White Hall & Funkhouser
15 and Under	29	24	5	5	5
16 - 20	27	24	3	1	1
21 - 25	34	17	17	17	15
26 - 30	44	18	26	23	20
31 - 35	46	36	10	2	1
36 - 40	38	25	13	0	0
41 - 45	30	14	16	6	0
46 - 50	29	9	20	18	15
51 - 55	4	4	0	0	0
56 - 60	12	6	6	1	1
61 - 65	4	3	1	1	1
66 - 70	7	3	4	3	3
71 - 75	6	1	5	3	3
76 - 80	6	2	4	0	0
81 - 85	6	2	4	3	3
86 - 100	2	2	0	0	0
101 - 110	1	1	0	0	0
111 - 130	7	6	1	1	1
131 - 140	7	1	6	2	2
141 - 150	2	0	2	2	2
151 - 160	1	1	0	0	0
161 - 200	6	5	1	1	1
201 - 300	9	5	4	2	1
301 - 400	1	1	0	0	0
401 and Over	2	3	(1)	(1)	(1)
TOTALS	360	213	147	90	74

RUNNING SCENARIOS

YEAR 2027 & YEAR 2032 | ACADEMIC CORE

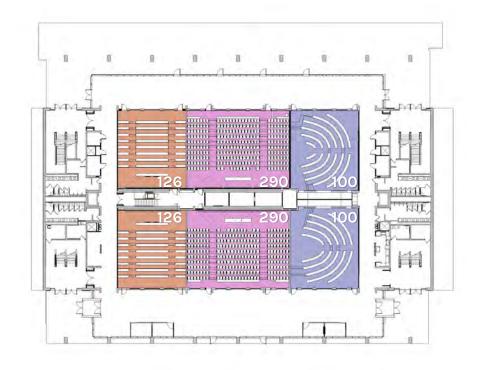
	<u>Year 2027</u>					<u>\</u>	Year 2032	2		
Classroom Capacity Grouping	Existing Rooms	BAU Needed	S/D	Increased Util Needed	S/D	Existing Rooms	BAU Needed	S/D	Increased Util Needed	S/D
15 and Under	4	3	1	3	1	4	2	2	3	1
16 - 20	16	16	0	16	0	16	16	0	16	0
21 - 25	15	15	0	13	2	15	15	0	10	5
26 - 30	17	16	1	7	10	17	13	4	5	12
31 - 35	10	19	(9)	9	1	10	10	0	6	4
36 - 40	10	22	(12)	10	0	10	29	(19)	10	0
41 - 45	19	28	(9)	19	0	19	28	(9)	19	0
46 - 50	16	25	(9)	15	1	16	23	(7)	14	2
51 - 55	1	5	(4)	1	0	1	9	(8)	1	0
56 - 60	3	8	(5)	3	0	3	7	(4)	3	0
61 - 65	3	5	(2)	3	0	3	8	(5)	3	0
66 - 70	3	7	(4)	3	0	3	5	(2)	3	0
71 - 75	2	5	(3)	2	0	2	4	(2)	2	0
76 - 80	3	8	(5)	3	0	3	7	(4)	3	0
81 - 85	6	9	(3)	6	0	6	9	(3)	6	0
86 - 100	1	5	(4)	1	0	1	9	(8)	5	(4)
111 - 130	2	4	(2)	2	0	2	3	(1)	3	(1)
131 - 140	1	3	(2)	1	0	1	2	(1)	1	0
161 - 200	4	6	(2)	5	(1)	4	7	(3)	6	(2)
201 - 300	4	8	(4)	6	(2)	4	9	(5)	7	(3)
301 - 400	1	3	(2)	3	(2)	1	4	(3)	2	(1)
401 and Over	2	4	(2)	3	(1)	2	3	(1)	4	(2)
TOTALS	143	224	(81)	134	9	143	222	(79)	132	11
						1				

Informs other short-term renovations

Informs other long-term reno & new blds

CLASSROOMS BY SIZE

11 FEWER CLASSROOMS







LEVEL 1

36 - 40	0
46 - 50	0
86-100	2
111-130	2
201 - 300	2
	6

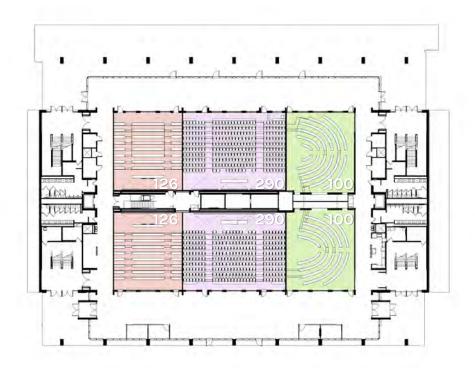
LEVEL 2

36 - 40	20
46 - 50	2
86-100	0
111-130	0
201 - 300	0
	22

LEVEL 3		TOTAL
36 - 40	12	32
46 - 50	6	8
86-100	0	2
111-130	0	2
201 - 300	0	2
	18	46

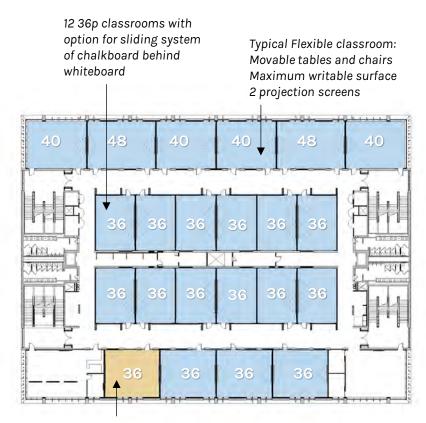
CLASSROOMS BY TYPE

FLEXIBILITY & COLLABORATION THROUGHOUT



LEVEL 1

TEAL	0
AUDITORIUM	2
TIERED LECTURE	2
HORSESHOE	2
MEDIUM FLEXIBLE	0
FLEXIBLE	0



Large Interactive Monitors, both sides

LEVEL 2

TEAL	0
AUDITORIUM	0
TIERED LECTURE	0
HORSESHOE	0
TECHNOLOGY FLEX	1
FLEXIBLE	21

TEAL classrooms
With team-based setup,
tables and chairs arranged
into groups around
perimeter, with wall-mtd
monitors



I E/\El 3

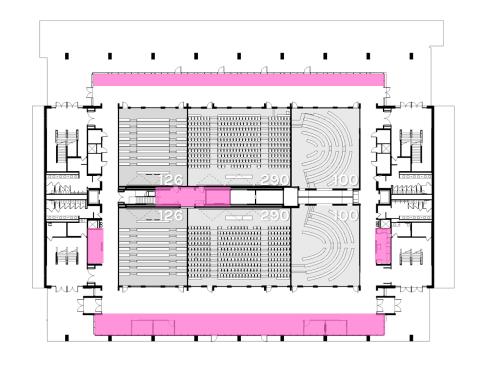
LLVLLJ		IOIAL
TEAL	2	2
AUDITORIUM	0	2
TIERED LECTURE	0	2
HORSESHOE	0	2
TECHNOLOGY FLEX	1	2
FLEXIBLE	15	36

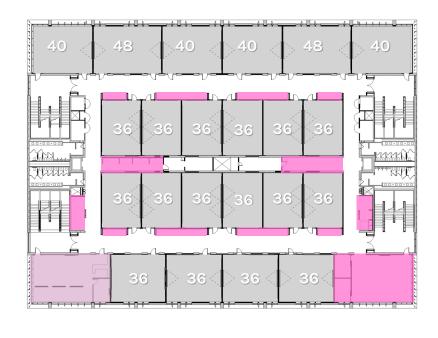
46

TOTAL

STUDENT COLLABORATION & STUDY

GROUP STUDY / OPEN STUDY / HUDDLE / INTERACTION / COLLAB / POWER BARS & BENCHES







LEVEL 1

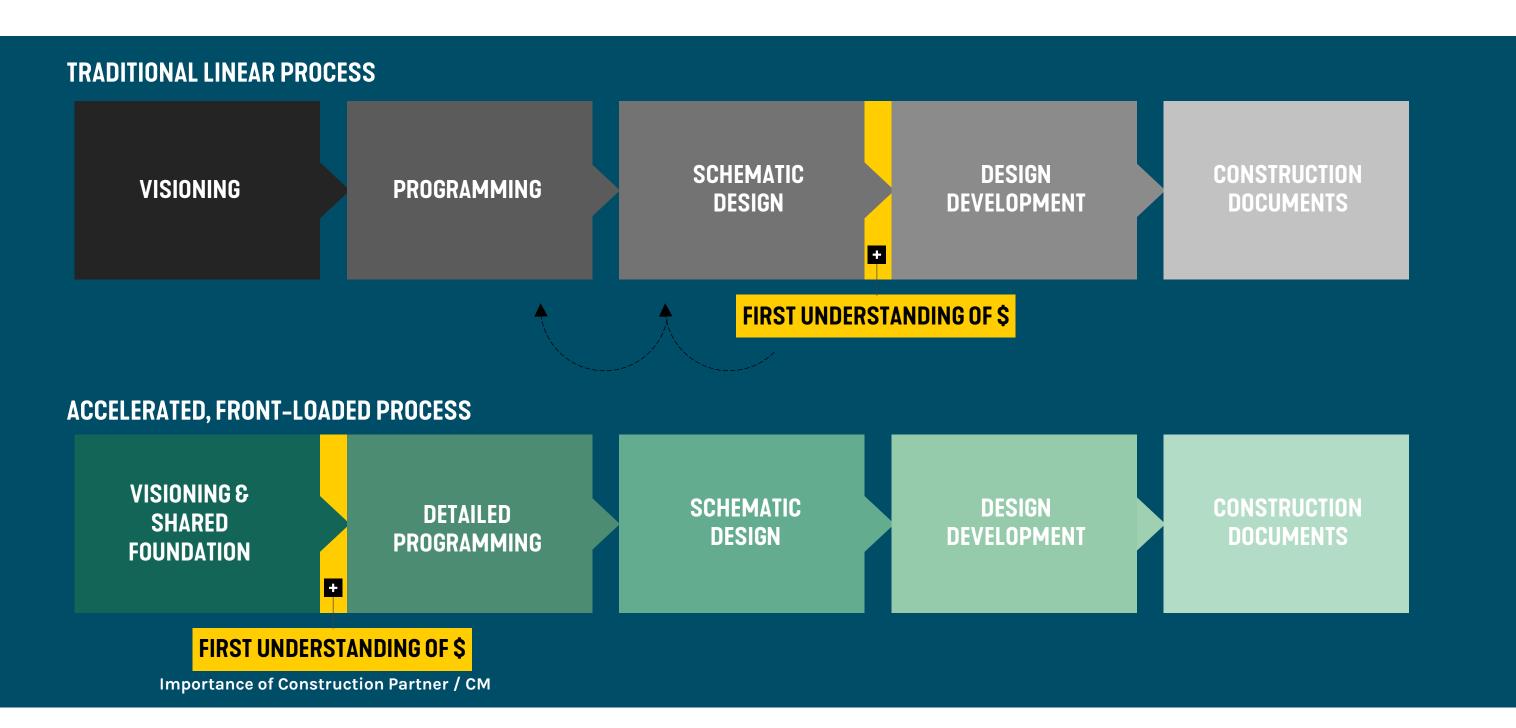
LEVEL 2

LEVEL 3

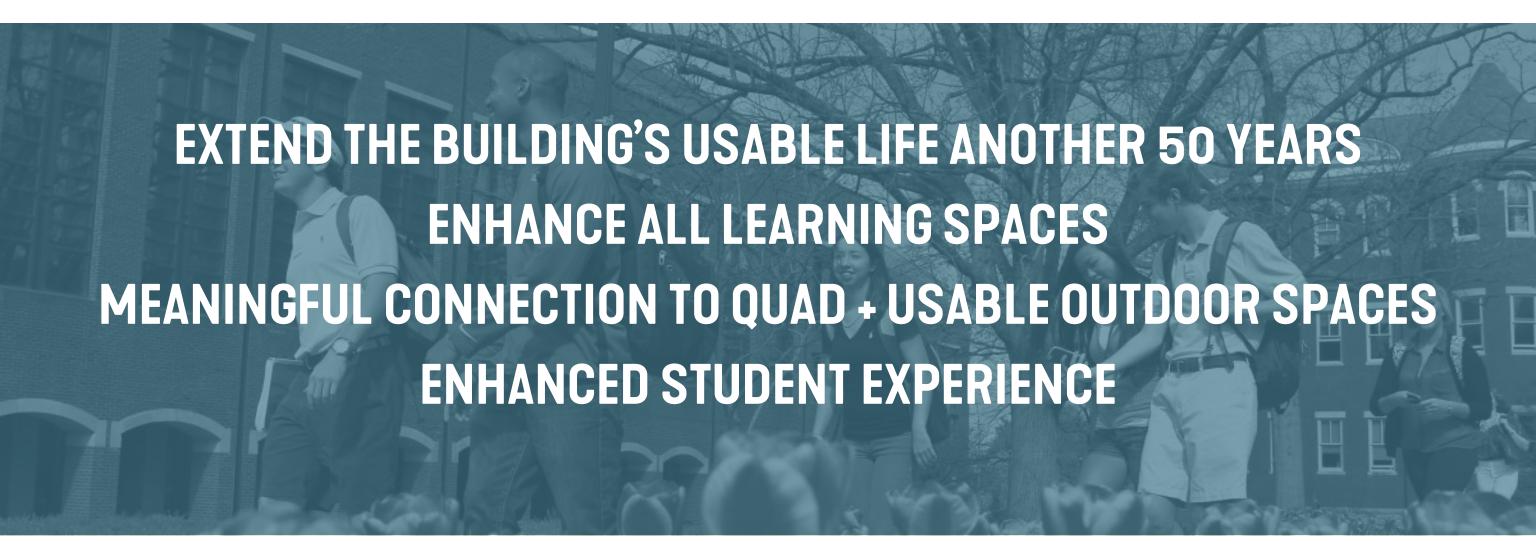
0 > 11%

OPTIMIZE BUDGET

Early cost modeling & visioning gives clients a clear understanding of budget to prioritize needs during design and is a framework to guide decision making.



VISIONING: A SHARED FOUNDATION



VISIONING: A SHARED FOUNDATION

ARCHITECTURE, SYSTEMS, **INFRASTRUCTURE**



Extend life another 50 years



SITE



Activate the Quad!

Usable outdoor spaces

PEDAGOGY & INTERIOR **ENVIRONMENT**



Enhance Student Experience

Enhance All Learning Spaces

BASELINE: ABSOLUTES TO GET BUILDING WHOLE AND EXTEND USABLE LIFE

SYSTEMS, **INFRASTRUCTURE** & CORE/SHELL



Incl.







Architecture / Core & Shell / Envelope	
Replace all glass/glazing w/new & insul glass, shades	1,450,000
New Ext Doors (36)	260,000
Clean brick (no tuckpointing)	75,000
Repair cracks/spalling in concrete façade & refinish	115,000
Patch/Repair/Clean existing roof, replace flashing/copings	260,000
Refinish existing elevator cabs & update controls	100,000
Add accessibility lifts and stair modifications to Level 1	50,000
Replace 3 skylights damaged	7,200
Mechanical	
Replace Mechanical System in place w/ new & controls	9,000,000
New AHU's, VFD's in basement, HW/CW Pumps, VAV	
terminals w/reheat, all new ductwork, ducted return	
Fire Sprinklers throughout (incl. basement)(risers/fp exist)	2,000,000
Electrical & Telecom	
New Electrical System, incl Tx, MDP, Panels, Distribution	4,300,000
Replace all light fixtures with LED	1,900,000
Special / Fire Alarm, Security, Lightning, IT, Wifi, cabling	2,100,000
New stacked MDF/Elec rms inserted into empty shafts	75,000

	Repair leaks at nort areas), replace in-ki
	New hardscape & la not incl promenade

Repair leaks at north plaza, stair & west planter (3 main areas), replace in-kind, basic landscape	430,000
New hardscape & landscape along south façade (up to but not incl promenade)	200,000

All int spaces & classrooms updated finishes, including removing steps/platforms (new furn in soft costs)	3,400,000
All corridors – affect partitions and prepare for furn or millwork benches and bartops (pwer & wifi) with Strategic glass at corridors looking into classrooms	350,000
New AV throughout, incl room schedule New ceilings throughout	2,300,000 1,700,000
Stairs Clean/repair and reseal terrazzo Strategic mod to stair railings/infill and handrails Int Stair doors & hold-opens	270,000

All other partitions btwn classrooms remain existing

New wall finishes

locations

SMITHGROUP

LEED Certified

DIALS: VARIABLES, OPTIONS

SYSTEMS, **INFRASTRUCTURE** & CORE/SHELL



Architecture / Core & Shell / Envelope			
Extend south lobby	245,000		
Extend south lobby	210,000		
Double width of all windows at upper floor classrooms	250,000		
Introduce glass corners at L2, L3 (replace brick w/glazing)	100,700 / corner		
Insulate exterior wall at inside face, concrete	(75,000)		
Insulate exterior wall at inside face, brick	120,000		
Insulate exterior wall outside cavity wall, new brick, flashg	600,000		
Insulate and metal panel at ext soffits below occ space	125,000		
Insulate edge of concrete slab at upper floors	25,000		
New 15year Roof Assembly (Modi Bit) + Scupper Ovrflw	580,000		
New 30year Roof Assembly (TPO) + Scupper Ovrflw	770,000		
Replace Elevator cabs with new	230,000		
Replace Elevator cabs with new and extend 1 to roof	320,000		
Replace additional 13 skylights	31,200		
Mechanical			
Move AHU under captured space, flat-floored classrms	350,000		
Move AHU to Roof and add Penthouse	1,100,000		
Electrical & Telecom			
New Generator replace in existing location	n/a		
LEED Silver	1,700,000		



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corner		in



nomovo ana ropiaco onaro norar piaza pavoro ana modiation,	210,000
replace with new IRMA and concrete pavers	
Extend hardscape/landscape scope along south side to include promenade area and edge of quadrangle	220,000

PEDAGOGY & INTERIOR **ENVIRONMENT**



New Flat Floor Structure at Large Format Classrms New Collab Tier / ramping at Large Format Classrms Demo & New Partitions at L2, L3 to modify classroom sizes (incl greater %glass at corridor walls) Millwork – built-in benches, counters

261,900 /room 97,000 /room 1,000,000

250,000

SCENARIOS

TARGET CONSTRUCTION COST BUDGET: \$54,000,000

BASELINE

OUTSIDE-IN

1

INSIDE-OUT

2

Baseline adjustments to Building & Site, LEED Certified	30,342,200
Raw Trade Costs	\$30,342,200
Total Construction Cost	\$50,266,200

Baseline adjustments to Building & Site Leed Silver	\$30,342,200 -
Site/Infrastructure/Envelope Options Double width of all windows at upper floor classrooms Introduce glass corners at L2, L3 (replace brick w/glazing) New 15year Roof Assembly (Modified Bitumen) Replace Elevator cabs with new (DC opinion?) Extend South Lobby Move AHU to Roof and add Penthouse Insulate Exterior Walls	250,000 402,800 4 corners 580,000 320,000 245,000 1,100,000
Site Extend Site Improvements to quad Pedagogy/Int Environment	\$220,000
(Baseline only)	33,460,000
	\$55,138,445

Baseline adjustments to Building & Site	\$52,466,500
Leed Silver	-
Site/Infrastructure/Envelope Options	
Double width of all windows at upper floor classrooms	250,000
Introduce glass corners at L2, L3 (replace brick w/glazing)	-
New 15year Roof Assembly (Modified Bitumen)	-
Replace Elevator cabs with new (DC opinion?) Extend South Lobby	230,000
Move AHU under captured space, flat-floored classrms	350,000
move / mo and or captared opace, hat heered electric	000,000
Site	
Extend Site Improvements to quad	-
Pedagogy/Int Environment	
New Flat Floor Structure at Large Format Classrms (2)	523,800
New Collab Tier / ramping at Large Format Classrms (2)	194,000
Demo & New Partitions at L2, L3 to modify classroom sizes	1,000,000
Added Millwork benches at corridors	250,000
	\$33,140,000
	\$54,638,375

MAXIMIZE IMPACT

Focus on the elements and implementation on items that have the LARGEST EFFECT ON STUDENTS to improve their learning experience.

HIGHLIGHTING STUDENT EXPERIENCE

ARCHITECTURE, SYSTEMS, INFRASTRUCTURE



Extend life another 50 years | A

- Place to be / identity
- Daylight & Visibility
- Comfort throughout day
- Accessibility





Activate the Quad!

- Visibility in and out
- Outdoor Learning & Social

PEDAGOGY & INTERIOR ENVIRONMENT



Enhance All Learning Spaces

- Collaboration & Study
- Room Educational Adequacy





DAYLIGHT TO CLASSROOMS

DOUBLE WINDOWS TO TYPICAL CLASSROOMS



EXISTING BUILDING MODULE

LEVEL 1 CURTAIN WALL BROUGHT CLOSER TO FACE OF BUILDING – NEW GLAZING HAS FINER MULLION PROFILE

ADDED WINDOW OPENINGS - MIRROR EXISTING



NEW BUILDING MODULE





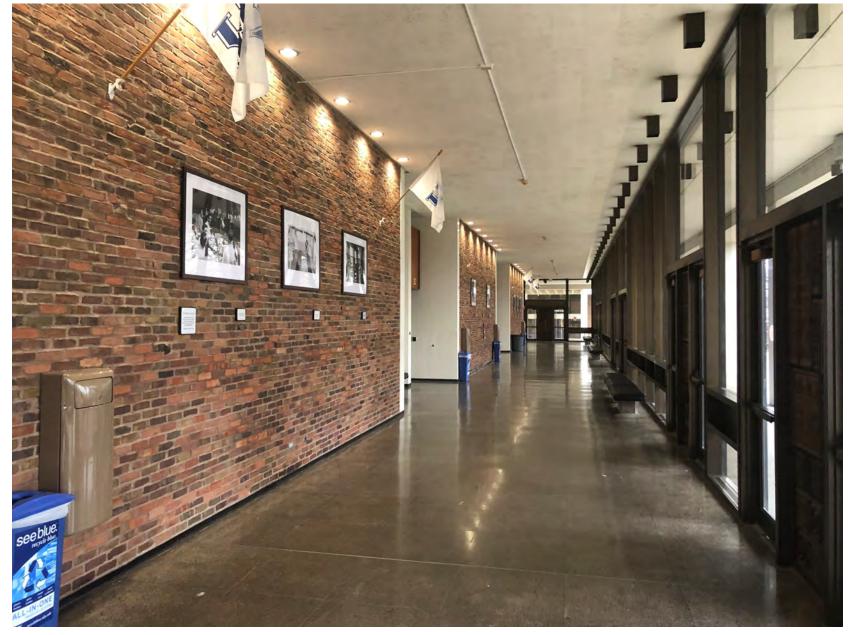








EXISTING INTERIOR ENVIRONMENT







ACTIVE CORRIDORS



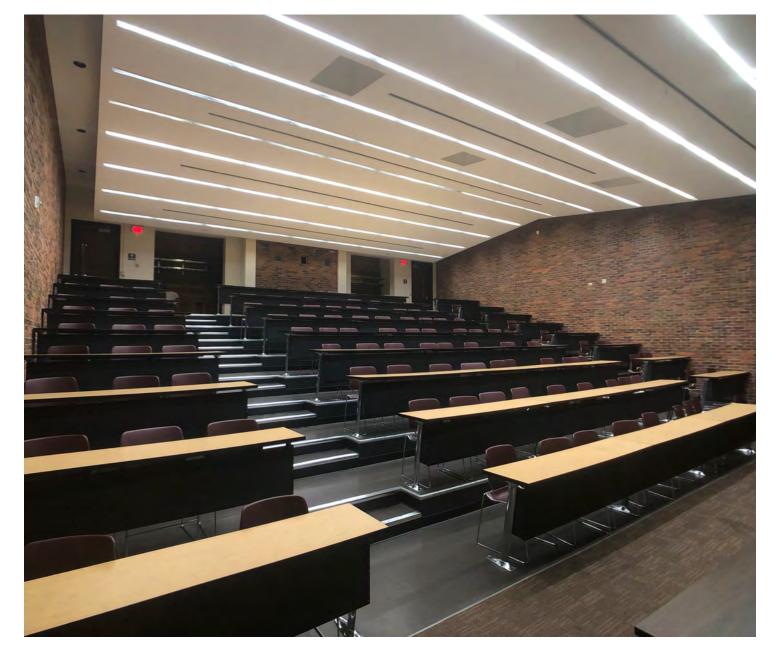
OPEN COLLABORATION

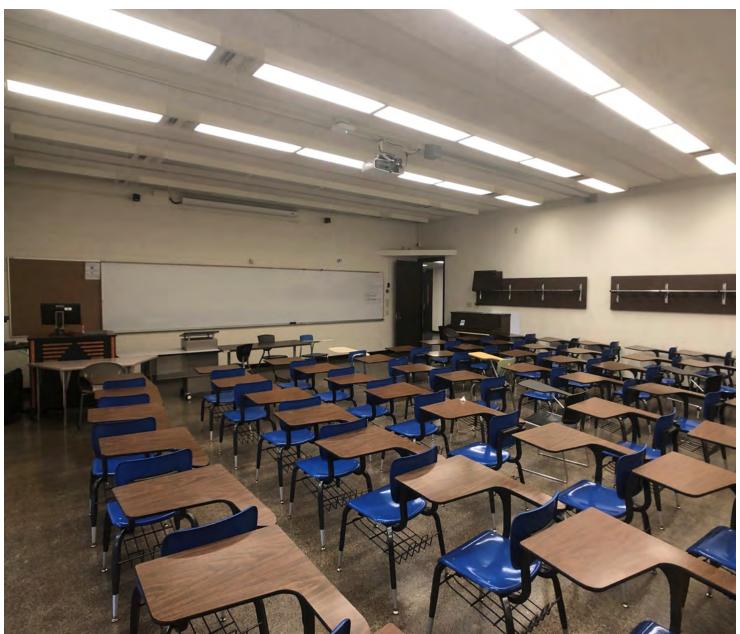
RECLAIMED MECHANICAL SPACE



EXISTING LEARNING SPACES

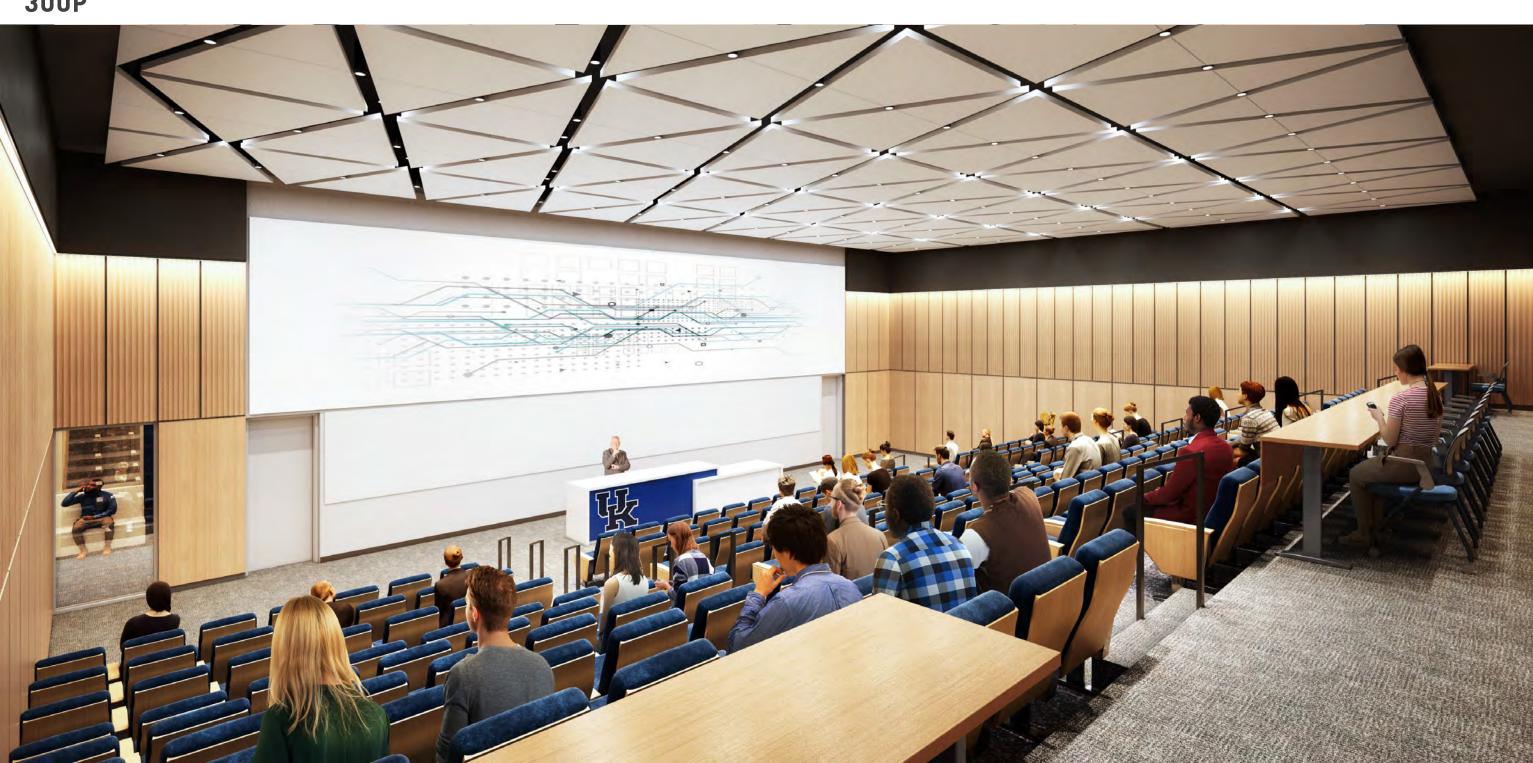
AUDITORIA





LARGE AUDITORIUM

300P



COLLABORATIVE TIER LECTURE ROOM

126P

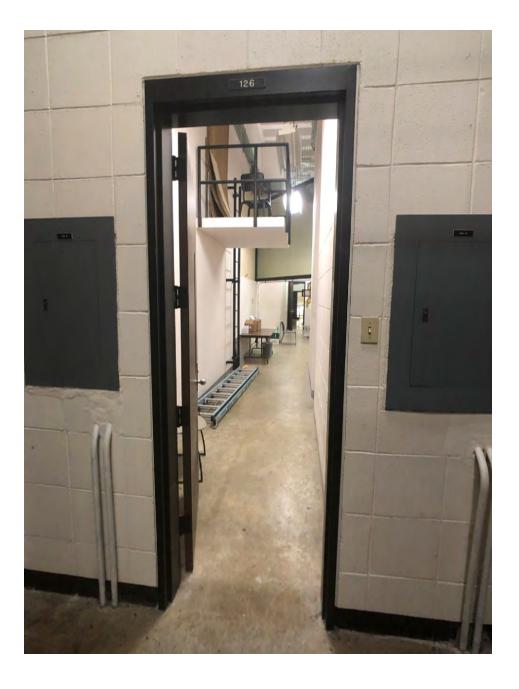


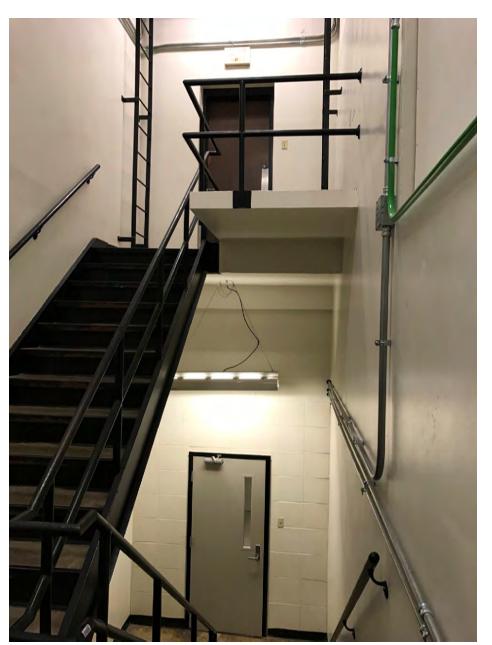
HORSESHOE CLASSROOM

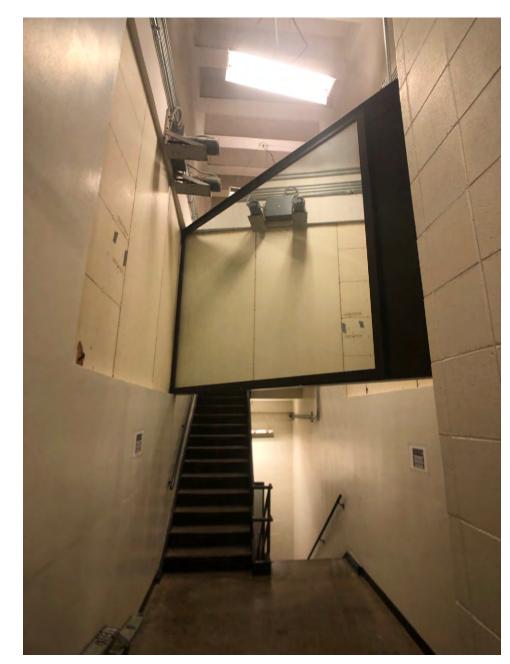
100P



EXISTING SERVICE CORRIDORS





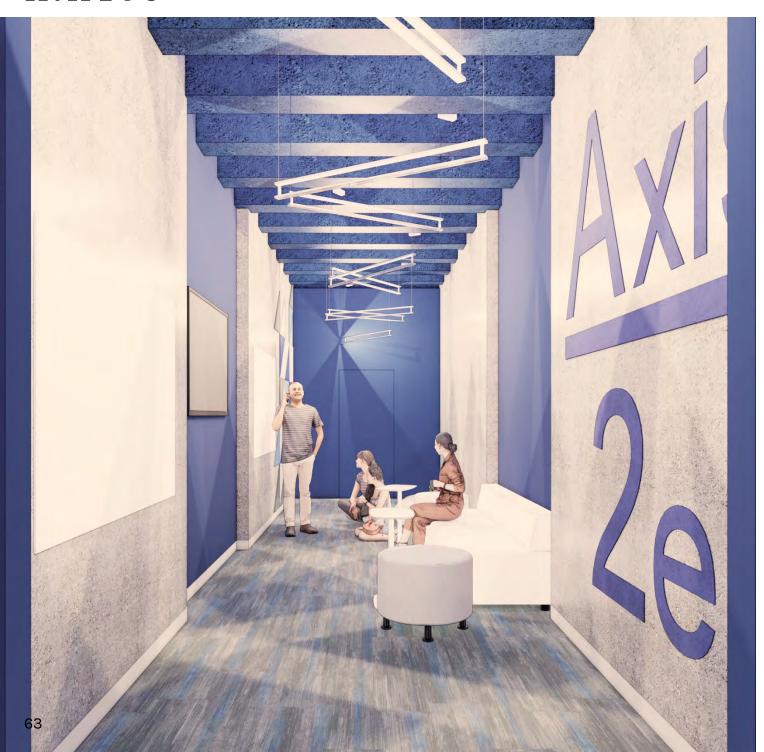


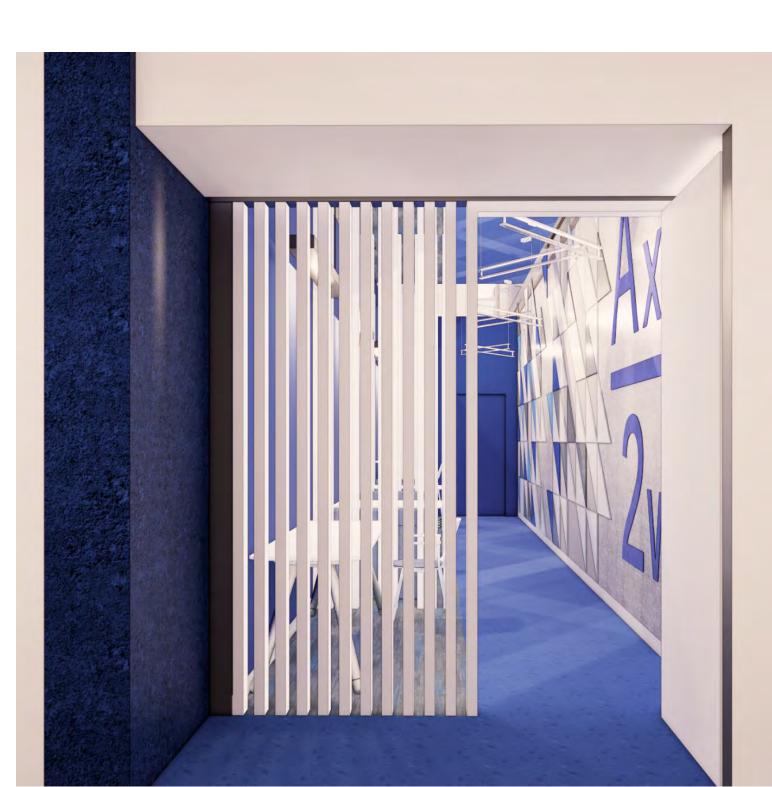
ACCESSIBILITY & INCLUSION

LEVEL 1



COLLABORATION AREA IN SPINE

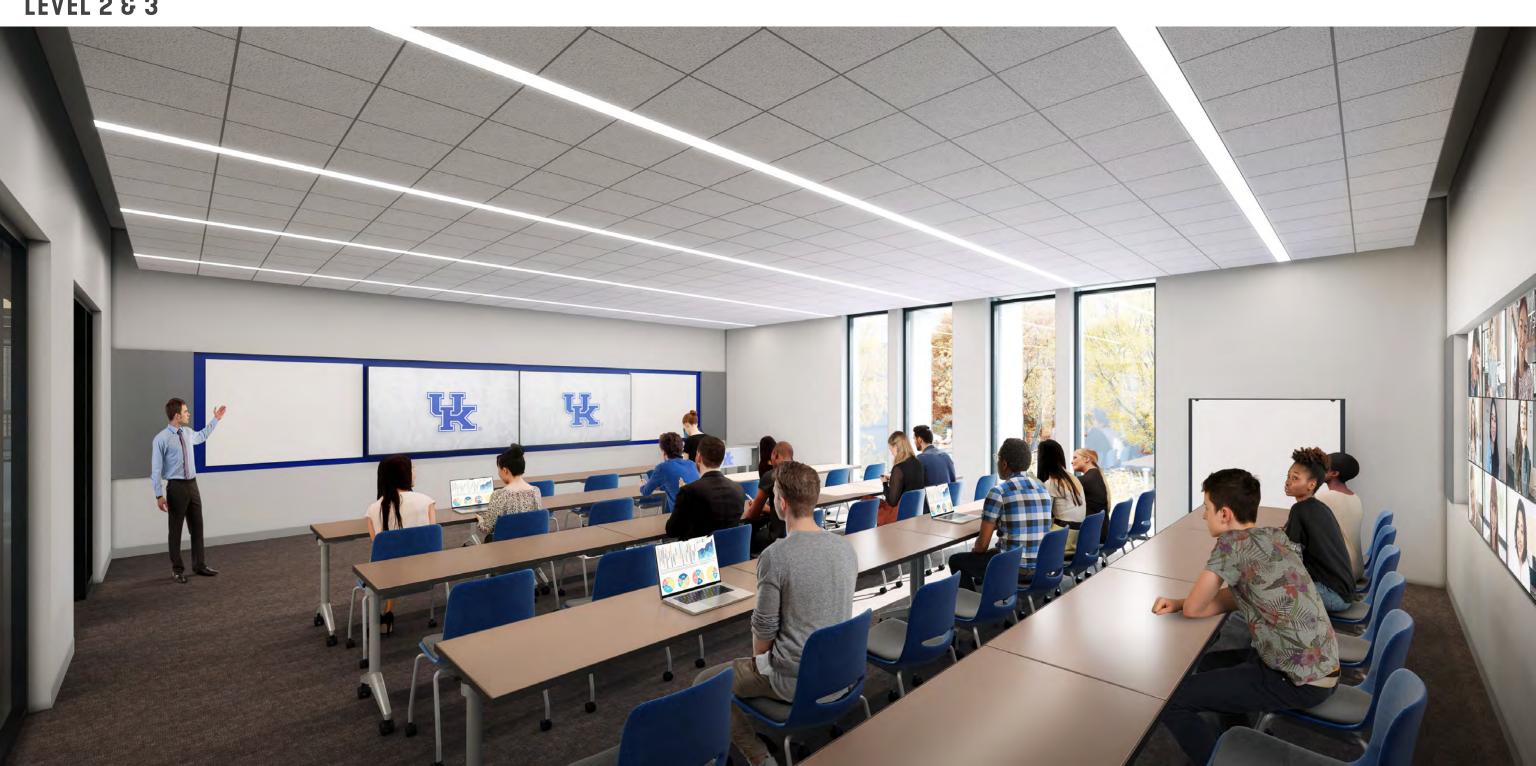




FLEXIBLE 36-48P CLASSROOM



TECHNOLOGY FLEX CLASSROOM



TEAL CLASSROOM

LEVEL 3



COLLABORATION

LEVEL 2 & 3 CORNER COLORATION



