



CLOUD COUNTY COMMUNITY COLLEGE

MASTER PLAN



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Executive Summary

An important educational asset that impacts Concordia is the Cloud County Community College Campus. The campus is a destination for students from Concordia, the State of Kansas, the US and many countries worldwide. The college serves the needs of 12 counties in North Central Kansas. Recently the enrollment of Cloud County Community College was 2,733 students. Concordia, Kansas residents view the college as an important driver for cultural, social, and economic initiatives.

Purpose

The primary purpose of this Master Plan is to create a compelling and feasible Campus Master Plan. This Master Plan examines the existing facilities so that the genesis of today's arrangement of buildings and open space can be understood. It then outlines the methods used by the GLMV team as it assembled information and sought an indication of facility improvements. Three planning horizons were used: one year, five years, and ten years. The milestones correspond to the period necessary to identify a series of priority facility improvements, prepare a development program and schematic design for each, secure funding, complete design and construction. Improvements given a lower priority may take longer to realize, and the Master Plan must also acknowledge that some will not be achieved for ten years or more; for example, replacement of recently improved buildings that can be expected to be functionally obsolete in ten years.

Flexibility

It is important that the Master Plan should anticipate an unceasing process of additions and changes to the campus reaching far into the future. Another objective of the Master Plan is therefore to configure the campus in such

a way that future expansions and infill projects can be accommodated. In other words, the plan should present a set piece; a closed system that will at some point be complete. The College will continue to grow, often in ways that are not predictable today, and the campus must be capable of keeping pace with that growth indefinitely.

Parameters

Working with the master plan steering committee comprising senior administration, faculty, staff and students, goals and derivative objectives were identified and refined. These established parameters within which the GLMV team was to work, indicating aspirations, expectations, and priorities.

Analysis

Analysis of the existing campus was done using a series of framework plans, identifying pedestrian circulation, open space, parking, and other features. An inventory of the condition and purpose of each building revealed the potential of each planned remodel and new buildings. Combined with intelligence from the plans, the building condition assessment yielded a plan of the campus showing areas amenable to change due to building remodels and new buildings. This plan has proved valuable to the Master Plan committee in recognizing where and to what extent modifications could occur.

Ongoing Planning

The campus Master Plan concludes with a series of recommended actions and key design guidelines to assure consistent quality of implementation. There is a recommendation that the campus Master Plan be revisited every five years to assure that its objectives

and recommendations remain current. Much of this Master Plan is strategic in nature, and will not become obsolete. However as improvements are made on campus, some anticipated by this plan, aspects of specific recommendations will need updating so that this document can continue to fulfill its function as a basis for coordination of campus facility improvements.

Execution

Implementation of the Master Plan depends on the availability of funding and other variables. Those projects not completed within the recommended time frame will be carried into the next decade to join anticipated long-term needs as well as facilities for programs that have not yet been devised. New and remodeled facilities that can be anticipated two to twenty years in the future include:

- New Technical Education Center
- New Athletic Facility
- New Main Entrance and Welcome Center
- Remodel to the Main Building
- New Residence Hall
- New Student Engagement Center





Priorities Summary

The priorities selected in the master plan project were categorized by the facilities committee at Cloud County Community College. These priorities were communicated to GLMV architecture, who has designed and developed the campus master plan with the college's community involvement. The college held multiple feedback sessions with students, faculty, and staff in the Fall 2022 semester. GLMV helped to capture the feedback that was provided during these sessions, and the administration made changes and recommendations to GLMV. To address concerns and questions, we held additional meetings with faculty to show changes that were made to address those concerns we heard from students, faculty and staff.

The 10-year master plan will be used as a guide to develop a capital campaign to raise the needed dollars for each of the priorities identified. The facilities master plan is a living document that will be adjusted, refined, and enhanced to meet the strategic goals and values of the college. The master plan allows for expanded opportunities and a clear path to improve the facilities at Cloud County Community College. The board of trustees at CCCC will approve and adopt the final facilities master plan for implementation.





CLOUD COUNTY
COMMUNITY COLLEGE



Cloud County Community College prepares students to lead successful lives and enhances the vitality of our communities.

Cloud County Campus - Aerial View



Priority 1 - Technical Education and Innovation Center





Priority 1 - Technical Education and Innovation Center



Floor Plan

Technical Education and Innovation Center



Renderings

Technical Education and Innovation Center

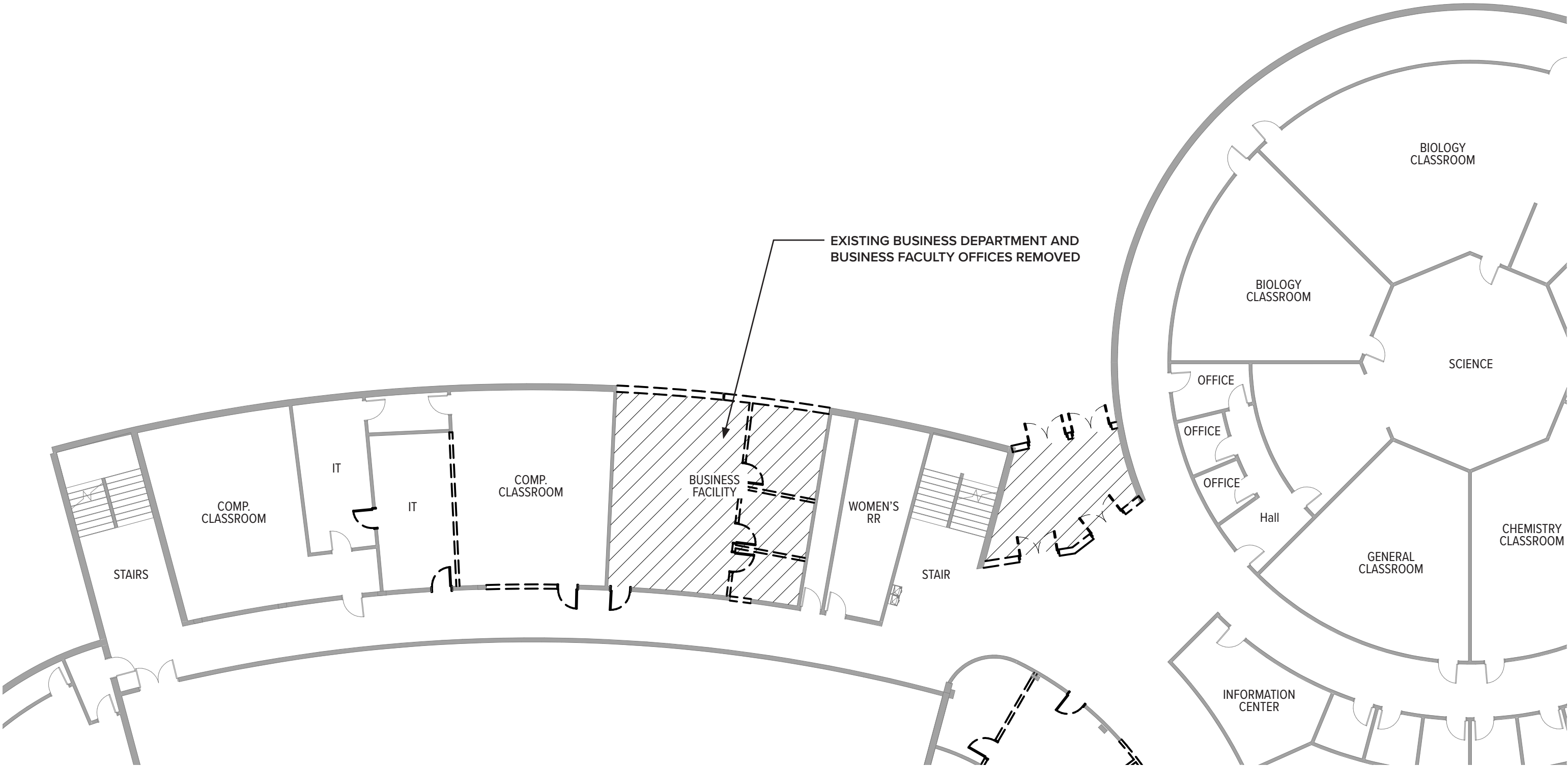
ROOM	AREA
1 VESTIBULE	130 SF
2 VESTIBULE	150 SF
3 LOBBY/LOUNGE	1763 SF
4 KITCHENETTE	215 SF
5 DATA	225 SF
6 CORRIDOR	564 SF
7 CLASSROOM	807 SF
8 CORRIDOR	286 SF
9 CLASSROOM	1082 SF
10 HALL	305 SF
11 VESTIBULE	49 SF
12 STORAGE	228 SF
13 LAUNDRY	78 SF
14 SKILLS	1065 SF
15 MED ROOM	101 SF
16 RESTROOM	82 SF
17 SIMULATION	956 SF
18 STORAGE	110 SF
19 CONTROL ROOM	305 SF
20 ICU SIMULATION	169 SF
21 N OFFICE 1	119 SF
22 N OFFICE 2	119 SF
23 N OFFICE 3	119 SF
24 N OFFICE 4	119 SF
25 N OFFICE 5	155 SF
26 N OFFICE 6	119 SF
27 N OFFICE 7	119 SF
28 N OFFICE 8	119 SF
29 N OFFICE 9	118 SF

ROOM	AREA
30 CLIMB/DRONE	1674 SF
31 WOMEN'S RESTROOM	256 SF
32 MEN'S RESTROOM	256 SF
33 CIRCULATION	3015 SF
34 VENDING	113 SF
35 RE OFFICE 1	113 SF
36 RE OFFICE 2	119 SF
37 RE OFFICE 3	123 SF
38 RE OFFICE 4	113 SF
39 RE OFFICE 5	120 SF
40 RE OFFICE 6	120 SF
41 RE OFFICE 7	120 SF
42 AG OFFICE 1	120 SF
43 AG OFFICE 2	120 SF
44 AG OFFICE 3	118 SF
45 WELLNESS	64 SF
46 WELLNESS	64 SF
47 FACULTY BREAK/PRINT	523 SF
48 JANITORIAL	92 SF
49 DATA	117 SF
50 FACILITIES	165 SF
51 CLASSROOM	1182 SF
52 CLASSROOM	1042 SF
53 STORAGE	57 SF
54 ELECTRICAL	157 SF
55 FIRE RISER/MECHANICAL	368 SF
56 SOLAR	1185 SF
57 STORAGE	299 SF
58 ROOF ACCESS	151 SF

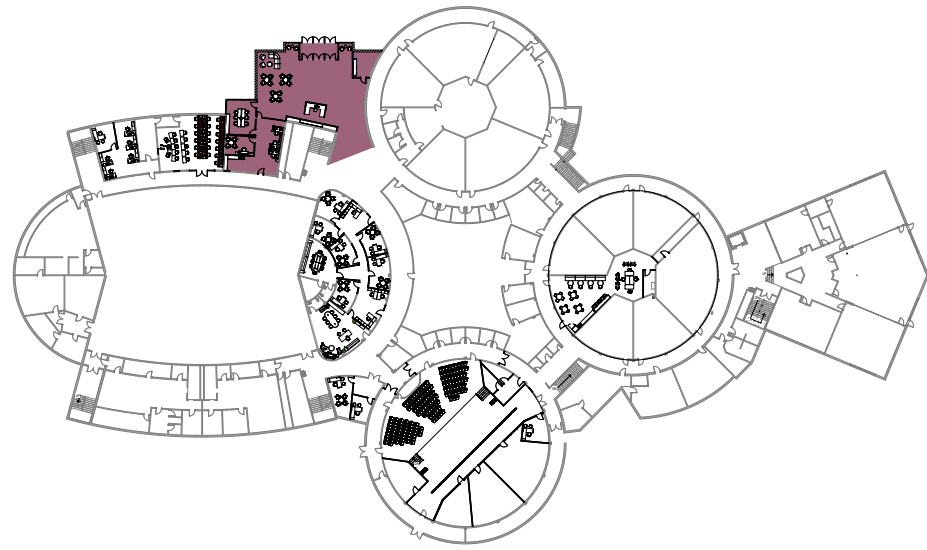
ROOM	AREA
59 COMPOSITE LAB	1596 SF
60 WORKSHOP	468 SF
61 AIR COMPRESSOR	148 SF
62 MEN'S RESTROOM	248 SF
63 WOMEN'S RESTROOM	248 SF
64 WELDING	1482 SF
65 GAS STORAGE	77 SF
66 CLASSROOM	894 SF
67 VESTIBULE	75 SF
68 CLASSROOM	888 SF
69 CLASSROOM	756 SF
70 CLASSROOM	1092 SF
71 CLASSROOM	996 SF
72 STORAGE	726 SF



Priority 2 - Front Entrance and Welcome Center



Current Floor Plan
Main Building - First Floor



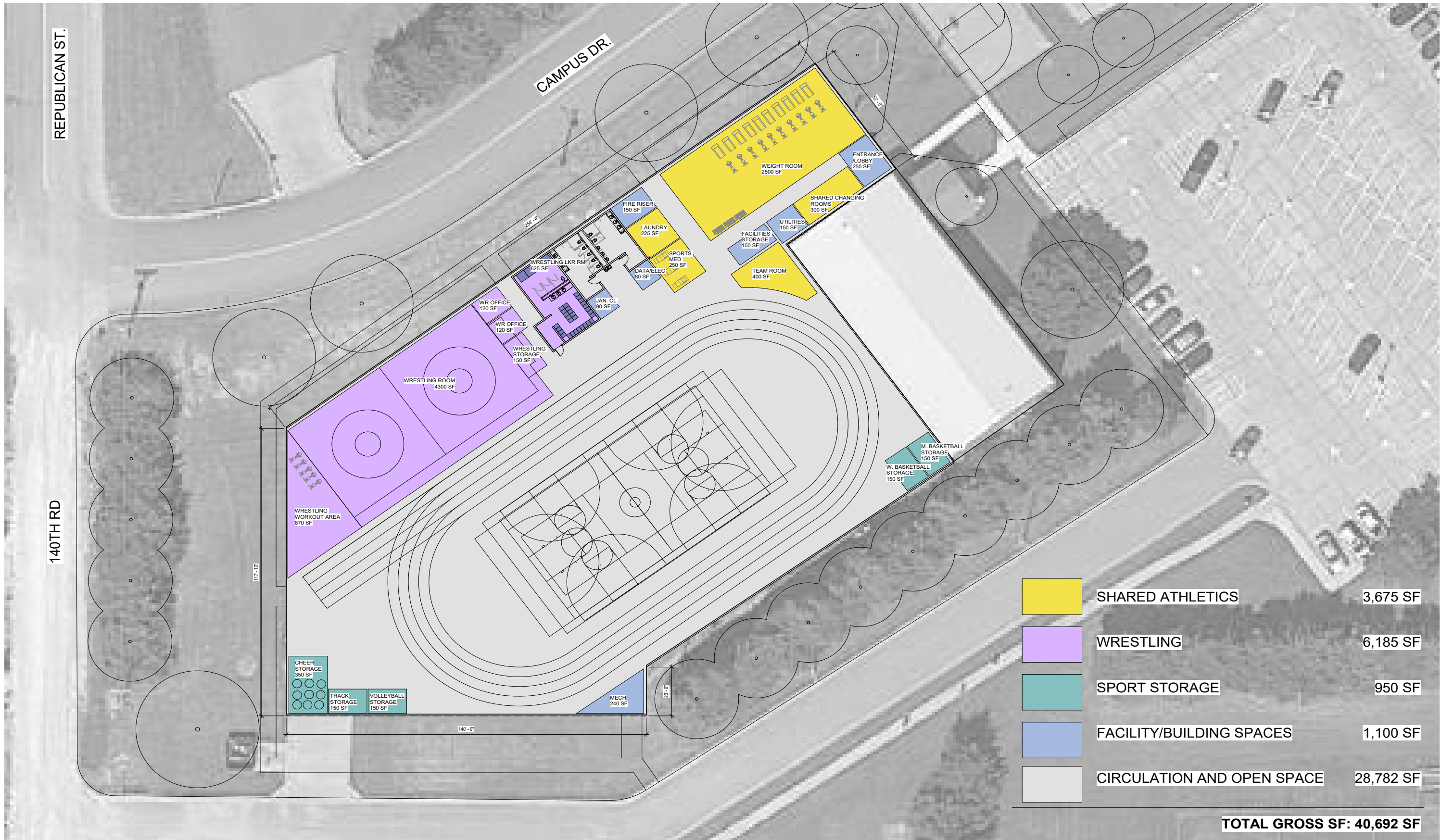
ROOM	AREA
1 VESTIBULE	185 SF
2 WELCOME CENTER	2454 SF
3 TICKETS	250 SF
4 MEETING ROOM	3217SF
5 ADMISSIONS DIRECTOR	174 SF
6 ADMISSIONS SUITE	589 SF



Proposed Floor Plan
Main Building - First Floor

Priority 3 - New Athletic Facility - Option A

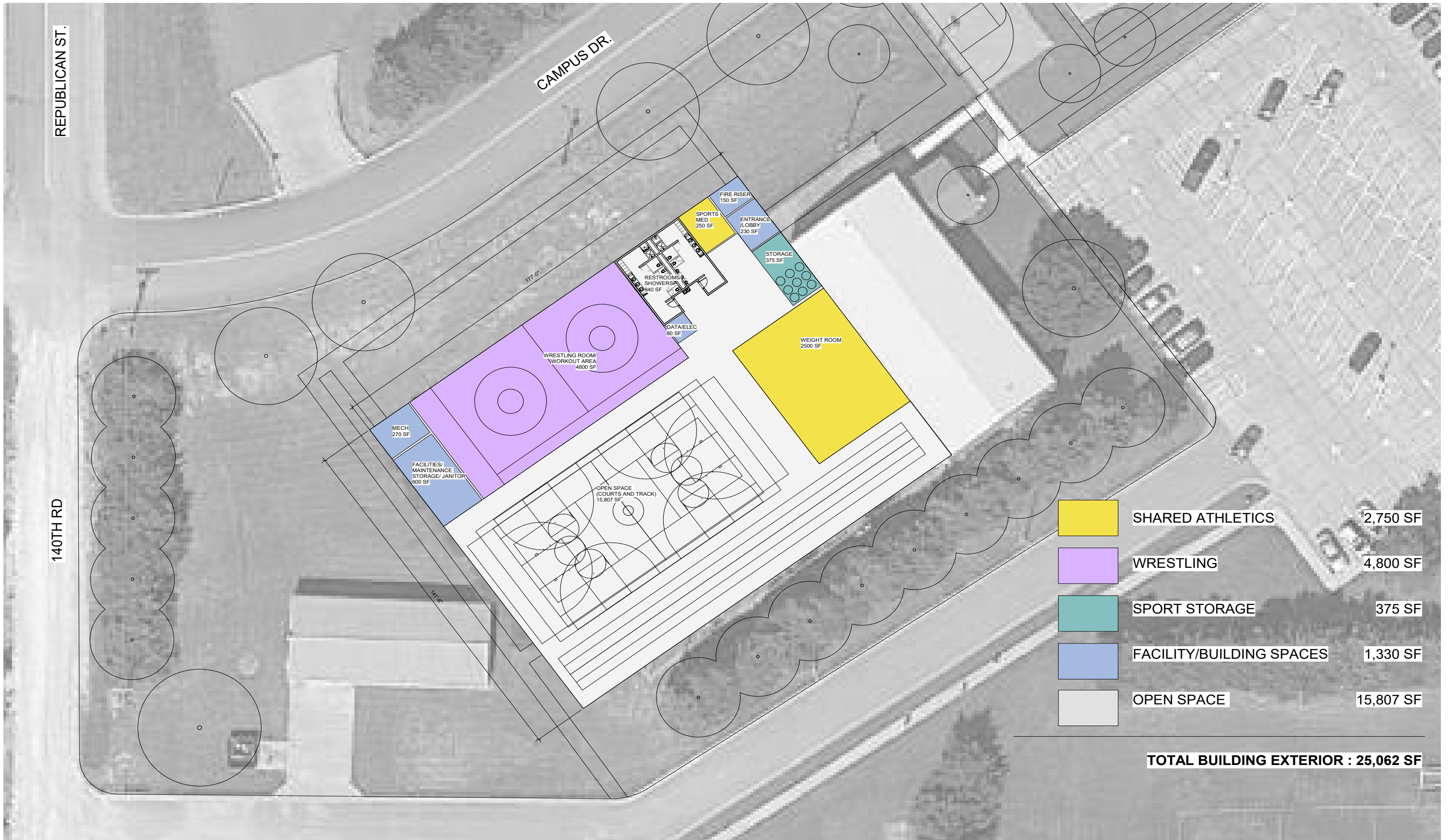




Athletic Facility Floor Plan - Option A

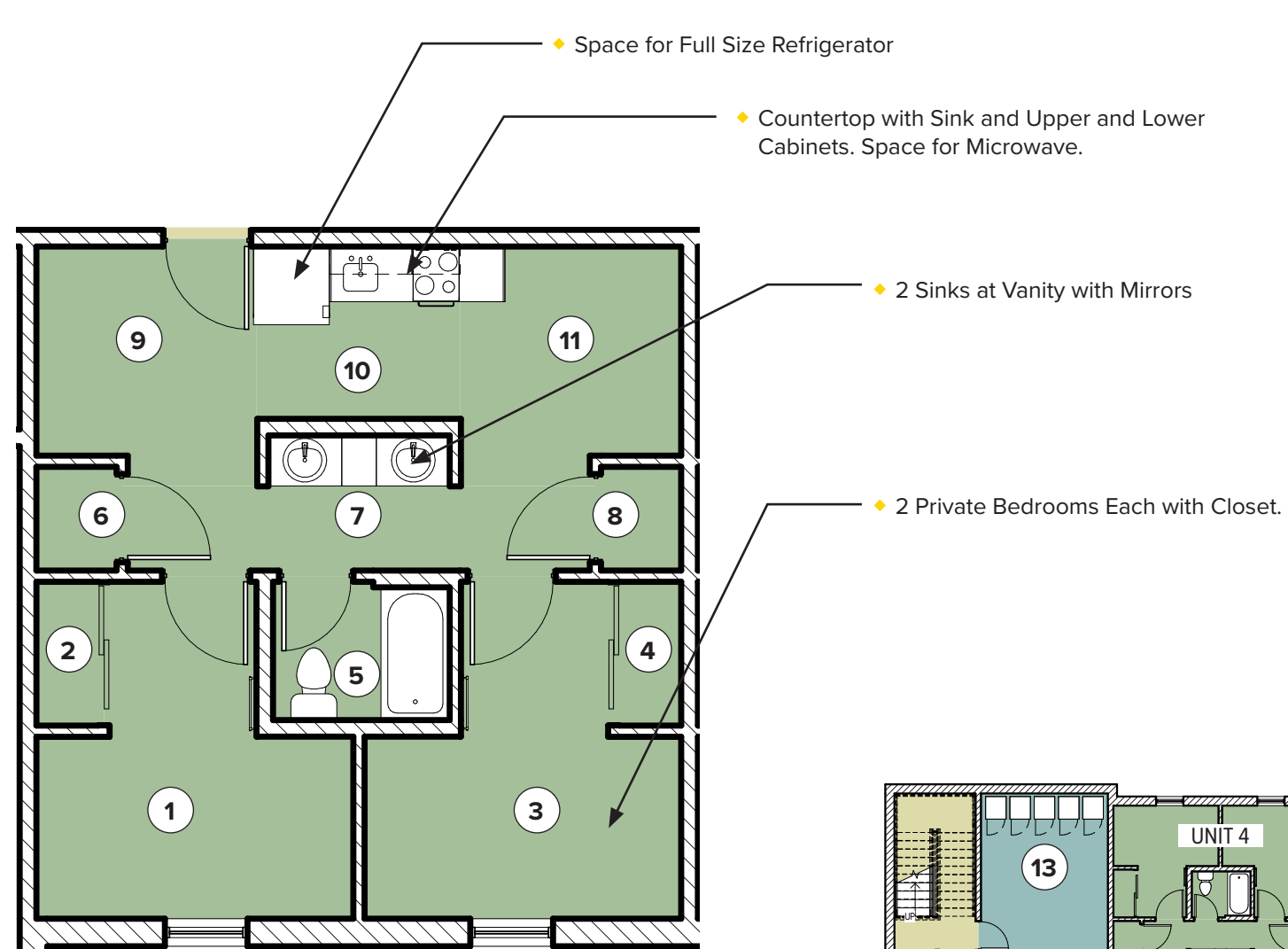
Priority 3 - New Athletic Facility - Option B





Athletic Facility Floor Plan - Option B

Priority 4 - New Residence Life Hall



TYPICAL SUITE

Residence Life Hall can be revised to have 20 single rooms (a single room) and 20 double rooms (shared space if needed)



New Residence Life Hall

First Floor Plan



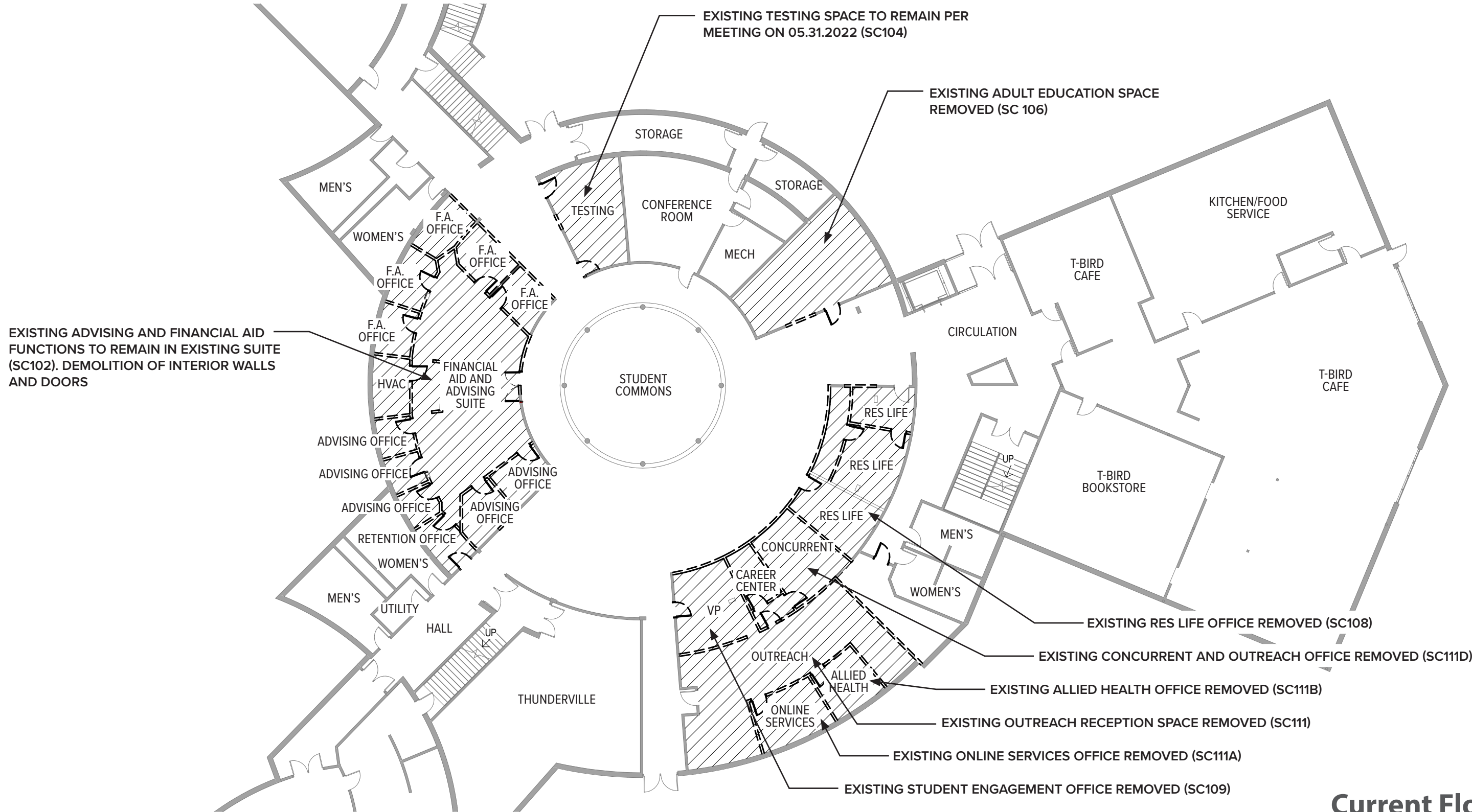
ROOM	AREA
1	BEDROOM 106 SF
2	CLOSET 12 SF
3	BEDROOM 106 SF
4	CLOSET 12 SF
5	BATHROOM 32 SF
6	STORAGE 11 SF
7	LAVATORY 63 SF
8	STORAGE 11 SF
9	ENTRY 66 SF
10	KITCHENETTE 46 SF
11	LIVING AREA 66 SF
12	STAIR 228 SF
13	MEP 243 SF
14	TELECOMM 106 SF
15	HALL 456 SF
16	MEP/FIRE RISER 263 SF
17	VESTIBULE 82 SF
18	HALL 288 SF
19	STUDY/HARDENED SPACE 557 SF
20	ELEVATOR 66 SF
21	RESTROOM 72 SF
22	RESTROOM 71 SF
23	JANITOR'S CLOSET 51 SF
24	MAIL ROOM 161 SF
25	LOUNGE 1252 SF
26	LOBBY 721 SF
27	STAIR 133 SF
28	RES HALL OFFICE 238 SF

ROOM	AREA
29	FRONT DESK 138 SF
30	VESTIBULE 183 SF
31	HALL 455 SF
32	TELECOMM 106 SF
33	MEP 243 SF
34	STAIR 338 SF
35	STAIR 228 SF
36	LAUNDRY 257 SF
37	TELECOMM 92 SF
38	HALL 676 SF
39	SECURITY OFFICE 348 SF
40	ELEVATOR 58 SF
41	RESTROOM 71 SF
42	RESTROOM 71 SF
43	JANITOR'S CLOSET 51 SF
44	MECHANICAL RISER 142 SF
45	LOUNGE/STUDY 1201 SF
46	HALL 457 SF
47	47 TELECOMM 92 SF
48	48 MEP 257 SF
49	49 STAIR 228 SF

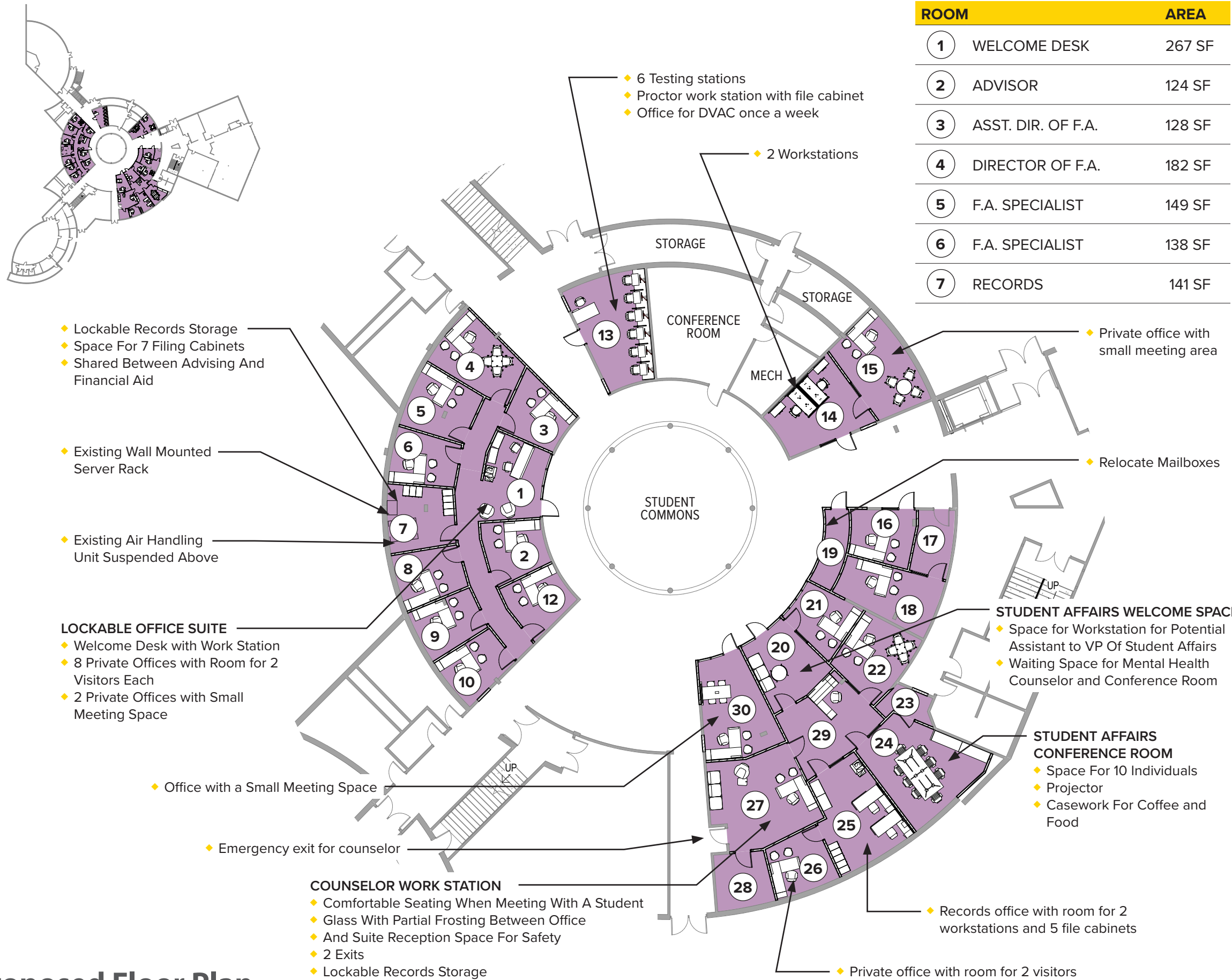
New Residence Life Hall

Second Floor Plan

Priority 5 - Student Affairs and Services Area



Current Floor Plan
Main Building - Ground Floor



ROOM	AREA
1 WELCOME DESK	267 SF
2 ADVISOR	124 SF
3 ASST. DIR. OF F.A.	128 SF
4 DIRECTOR OF F.A.	182 SF
5 F.A. SPECIALIST	149 SF
6 F.A. SPECIALIST	138 SF
7 RECORDS	141 SF

ROOM	AREA
8 ADVISOR	127 SF
9 ADVISOR	122 SF
10 ADVISING COORDINATOR	121 SF
11 NOT USED	-----
12 RETENTION DIRECTOR	121 SF
13 TESTING	278 SF
14 BUSINESS OFFICE	225 SF
15 OFFICE	225 SF
16 STUDENT ACTIVITIES	123 SF
17 HALL	91 SF
18 RESIDENCE LIFE	190 SF
19 MAILBOXES	71 SF
20 RECEPTION	175 SF
21 DIRECTOR OF AUX. SERV.	126 SF
22 VP OF STUDENT AFFAIRS	174 SF
23 STORAGE	50 SF
24 CONFERENCE ROOM	319 SF
25 STUDENT RECORDS	268 SF
26 STUDENT RECORDS OFFICE	129 SF
27 MENTAL HEALTH COUNSELOR	318 SF
28 RECORDS STORAGE	112 SF
29 WAITING	233 SF
30 CAREER CENTER	244 SF

Proposed Floor Plan
Main Building - Ground Floor

Priority 6 - Online and Outreach



Current Floor Plan
Main Building - Lower Floor

ROOM	AREA
1	QUIET STUDY 916 SF
2	MEDIA CENTER 680 SF
3	STORAGE 66 SF
4	ONLINE AND OUTREACH OFFICE SUITE 343 SF
5	DIRECTOR OF ASSESSMENT OFFICE 135 SF
6	DIRECTOR OF ONLINE OFFICE 155 SF
7	DIRECTOR OF OUTREACH OFFICE 155 SF
8	CONFERENCE ROOM 166 SF
9	ADULT EDUCATION 727 SF
10	OFFICE 159 SF
11	ART GALLERY 268 SF

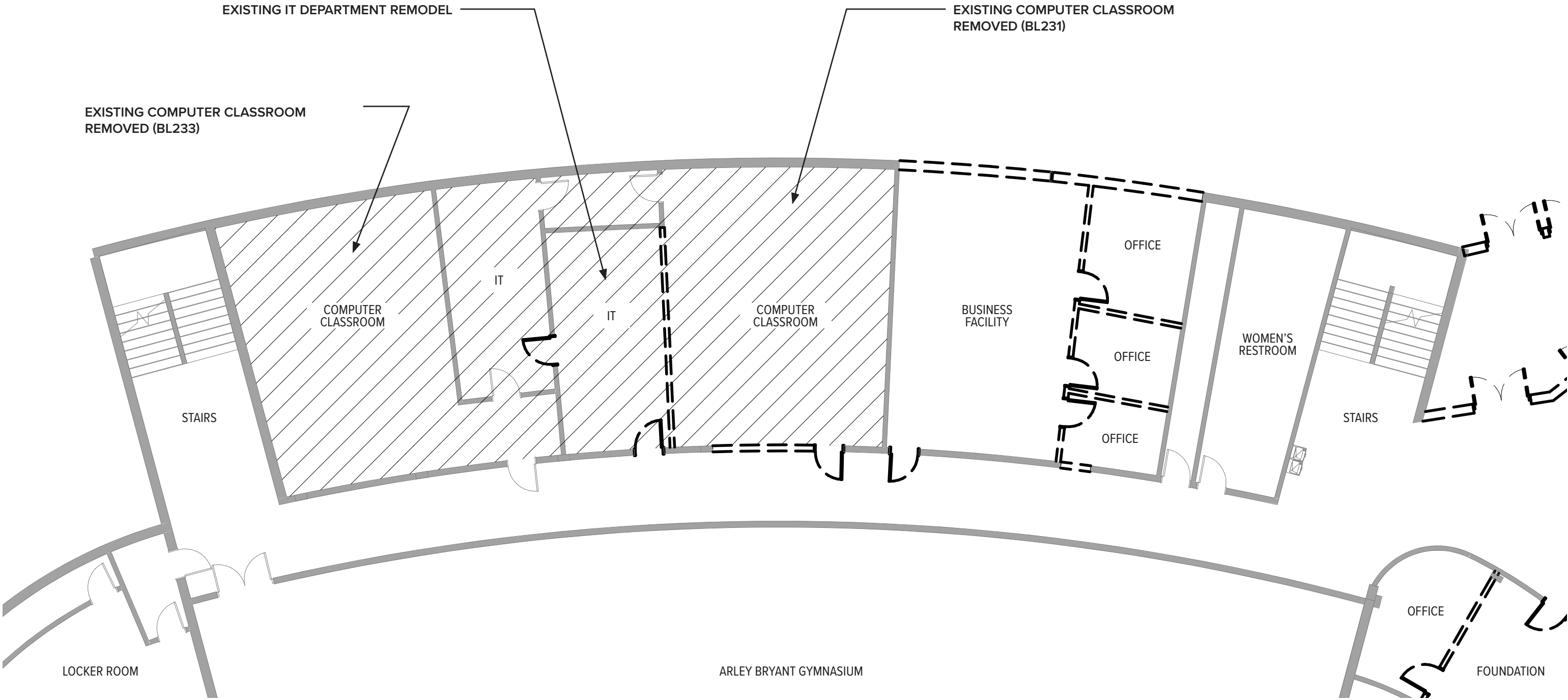


- ◆ Quiet Student Study Space With Lounge Furniture. New Carpet, Paint, Ceilings, Base.
- ◆ Relocated Media Center from Gr202.
- ◆ Adult Education Office with Room for 2 Visitors and 4 Lockable File Cabinets
- ◆ Adult Education Classroom and Testing

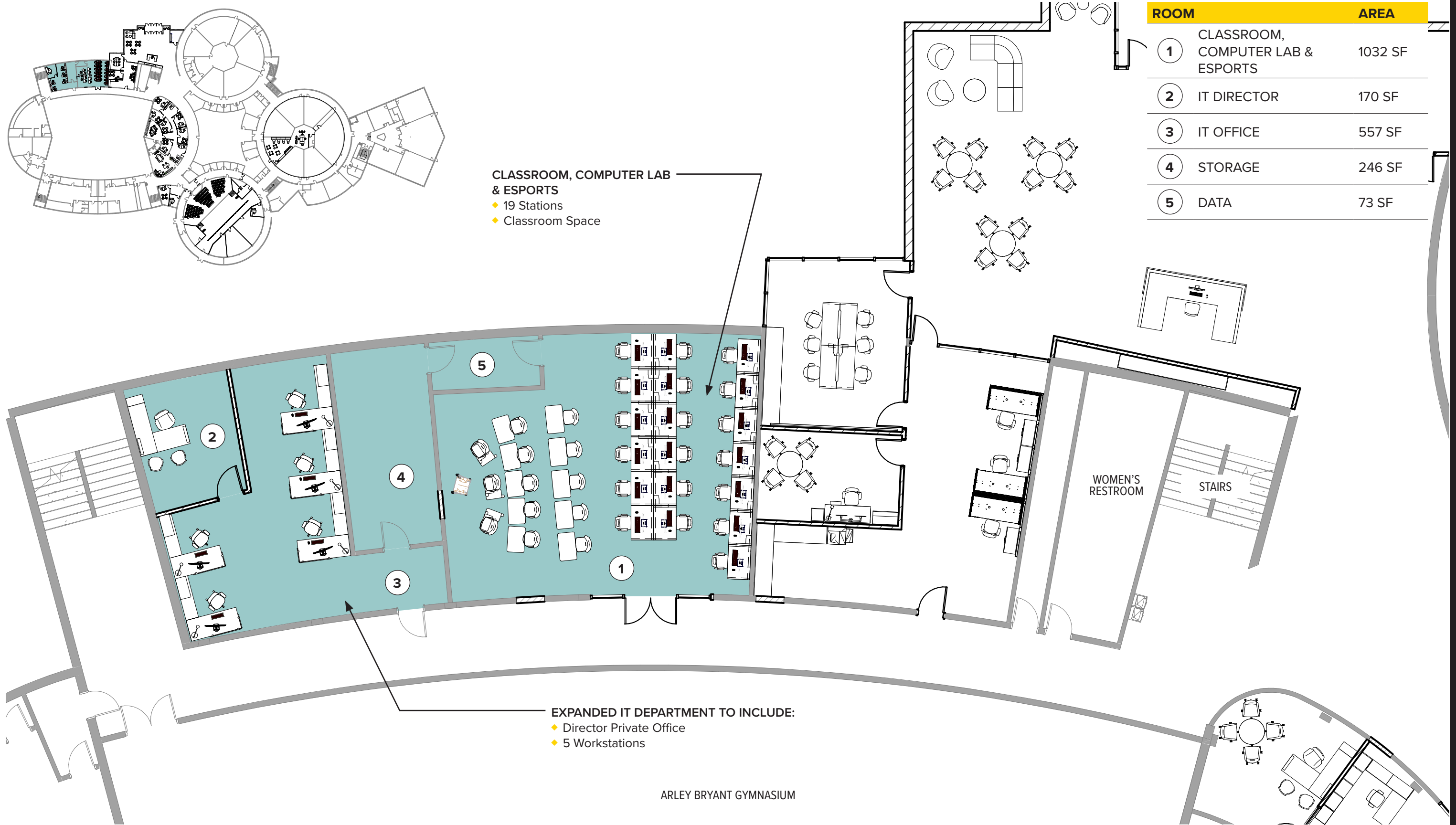
- OFFICE SUITE WITH:**
- ◆ 3 Private Offices with Room for 2 Visitors
 - ◆ 1 Workstation, with Room for an Additional Workstation
 - ◆ Conference Room for 6 Individuals

Proposed Floor Plan
Main Building - Lower Floor

Priority 7 - IT Expansion



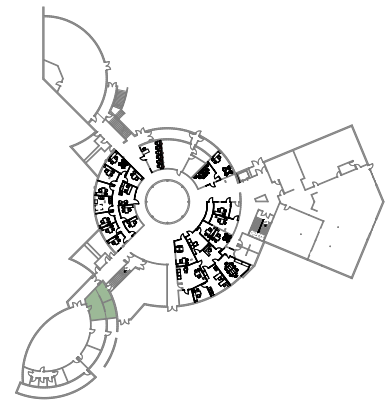
Current Floor Plan
Main Building - First Floor



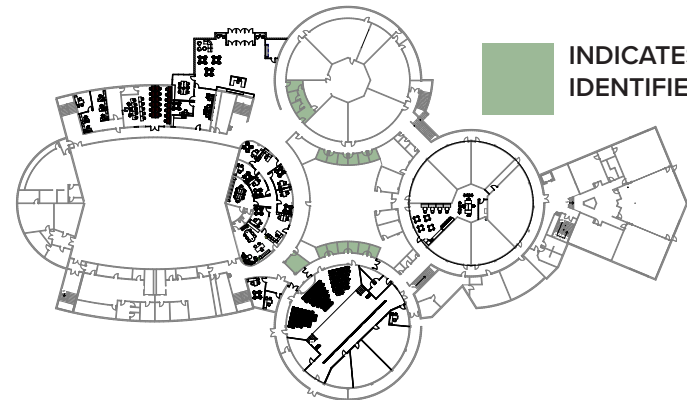
Proposed Floor Plan
 Main Building - First Floor

Priority 8 - Faculty Offices

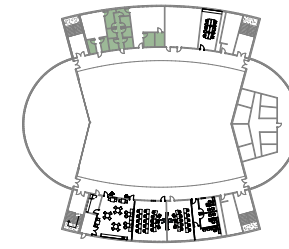




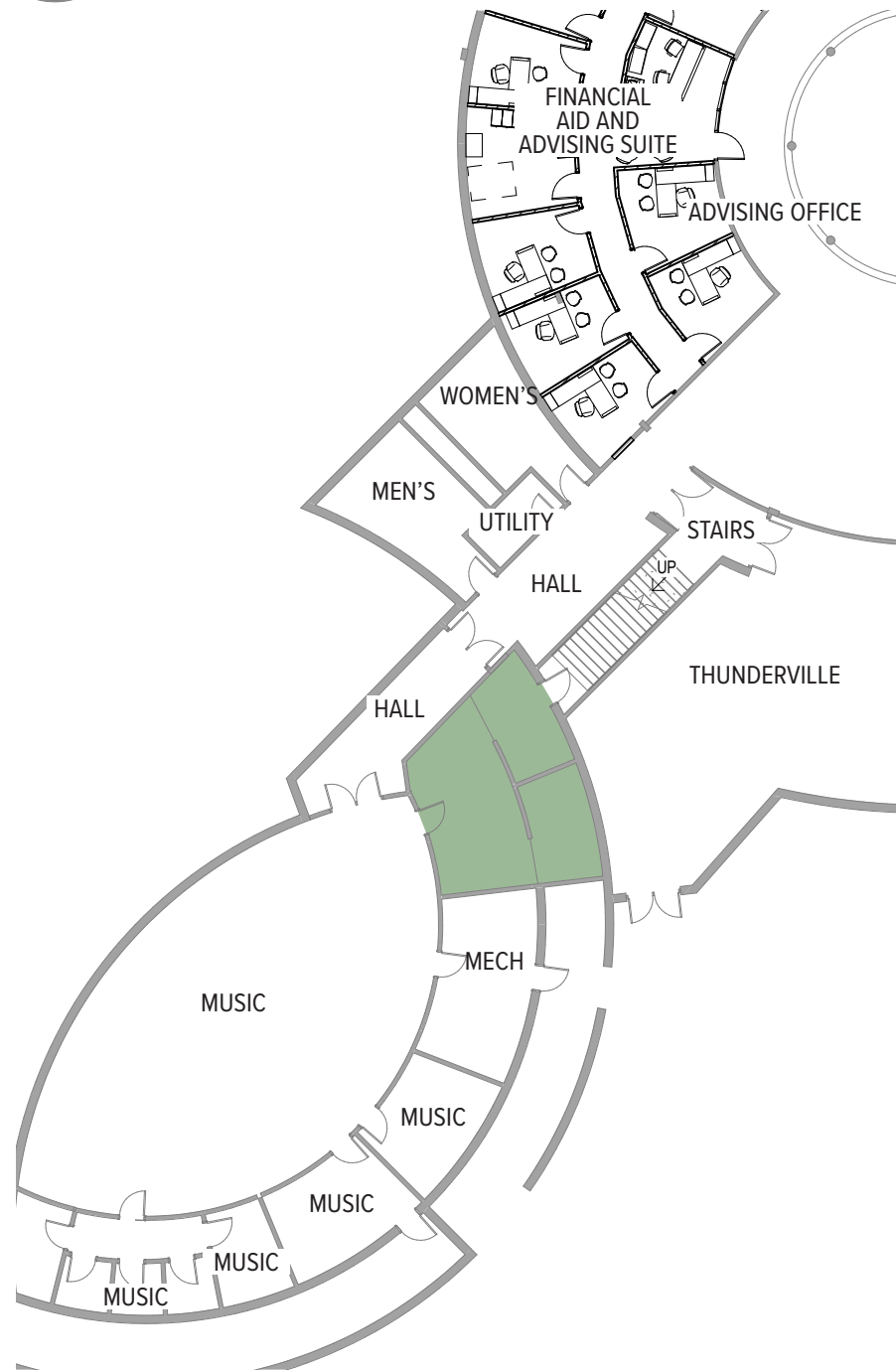
INDICATES FACILITY OFFICES IDENTIFIED FOR FACE-LIFT



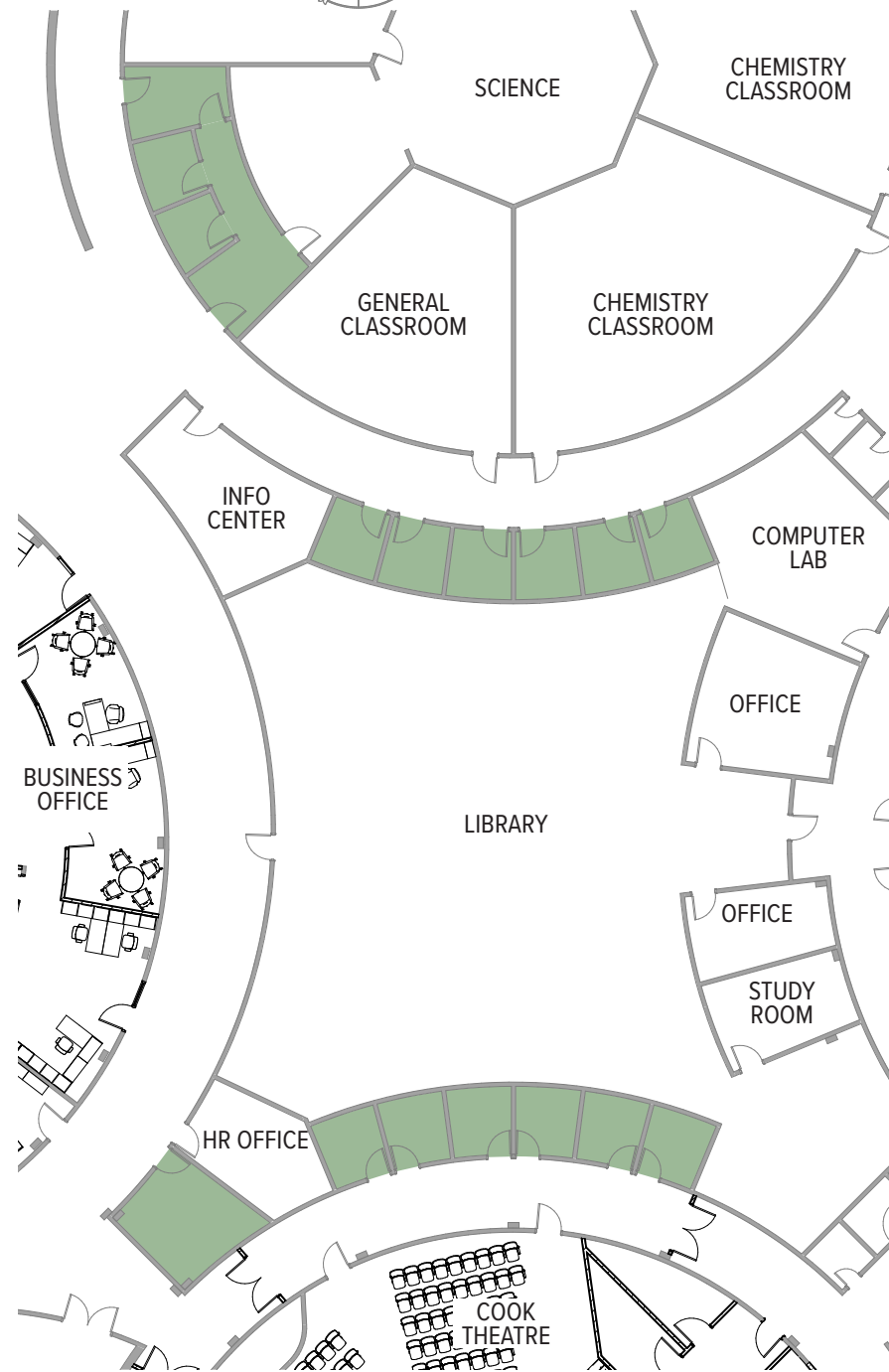
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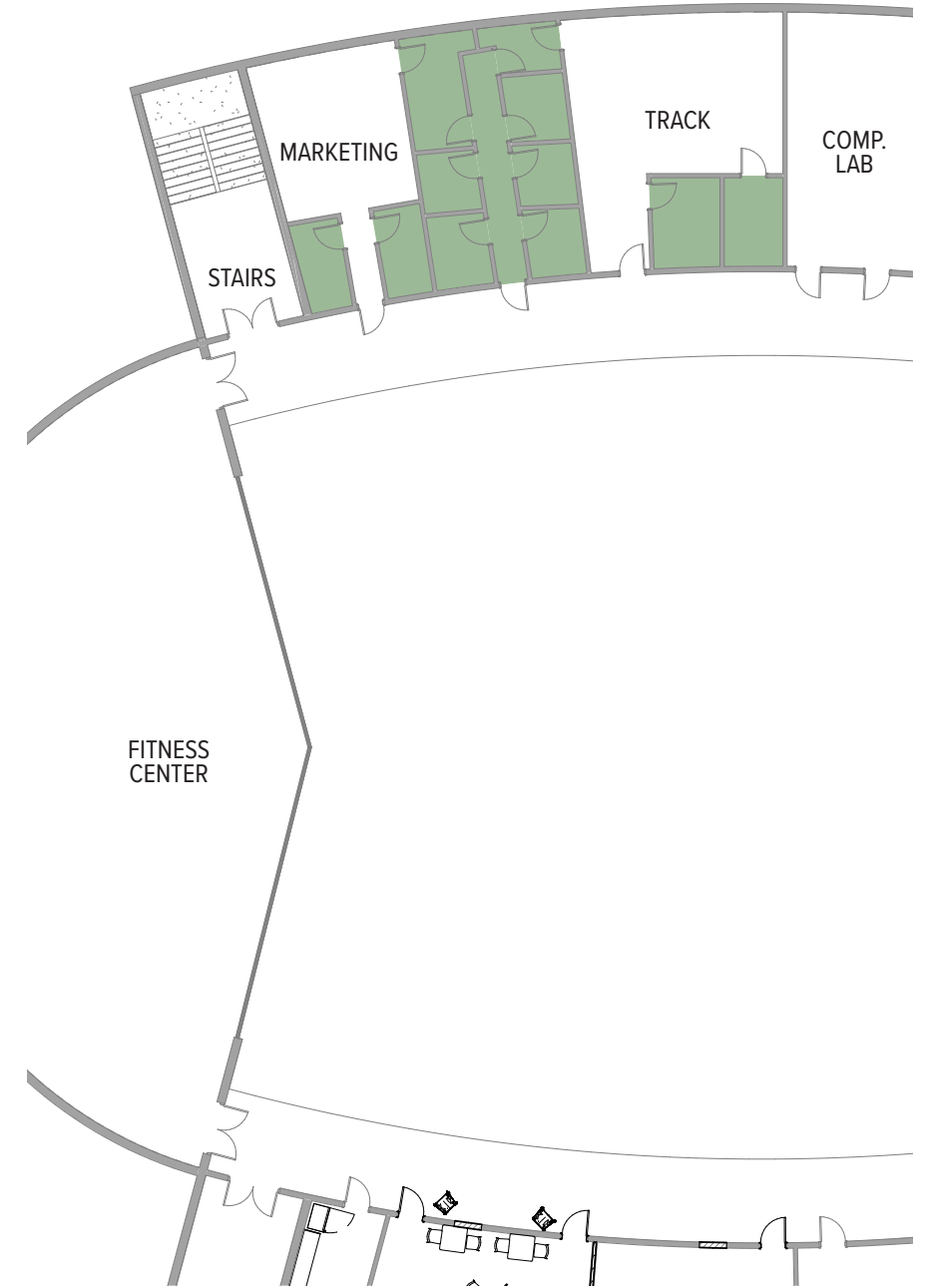
INDICATES FACILITY OFFICES IDENTIFIED FOR FACE-LIFT



Proposed Floor Plan
Main Building - Ground Floor

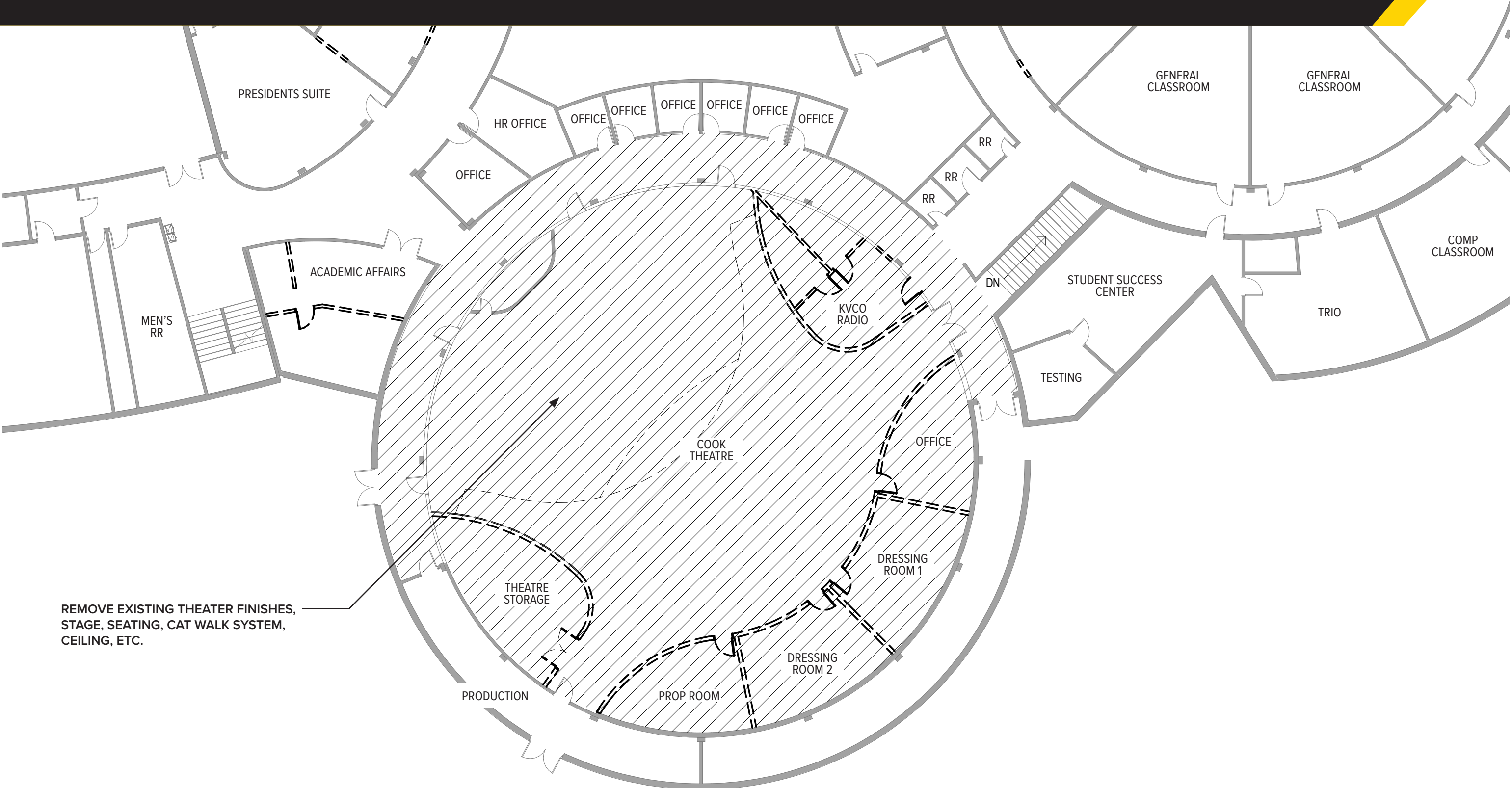


Proposed Floor Plan
Main Building - First Floor



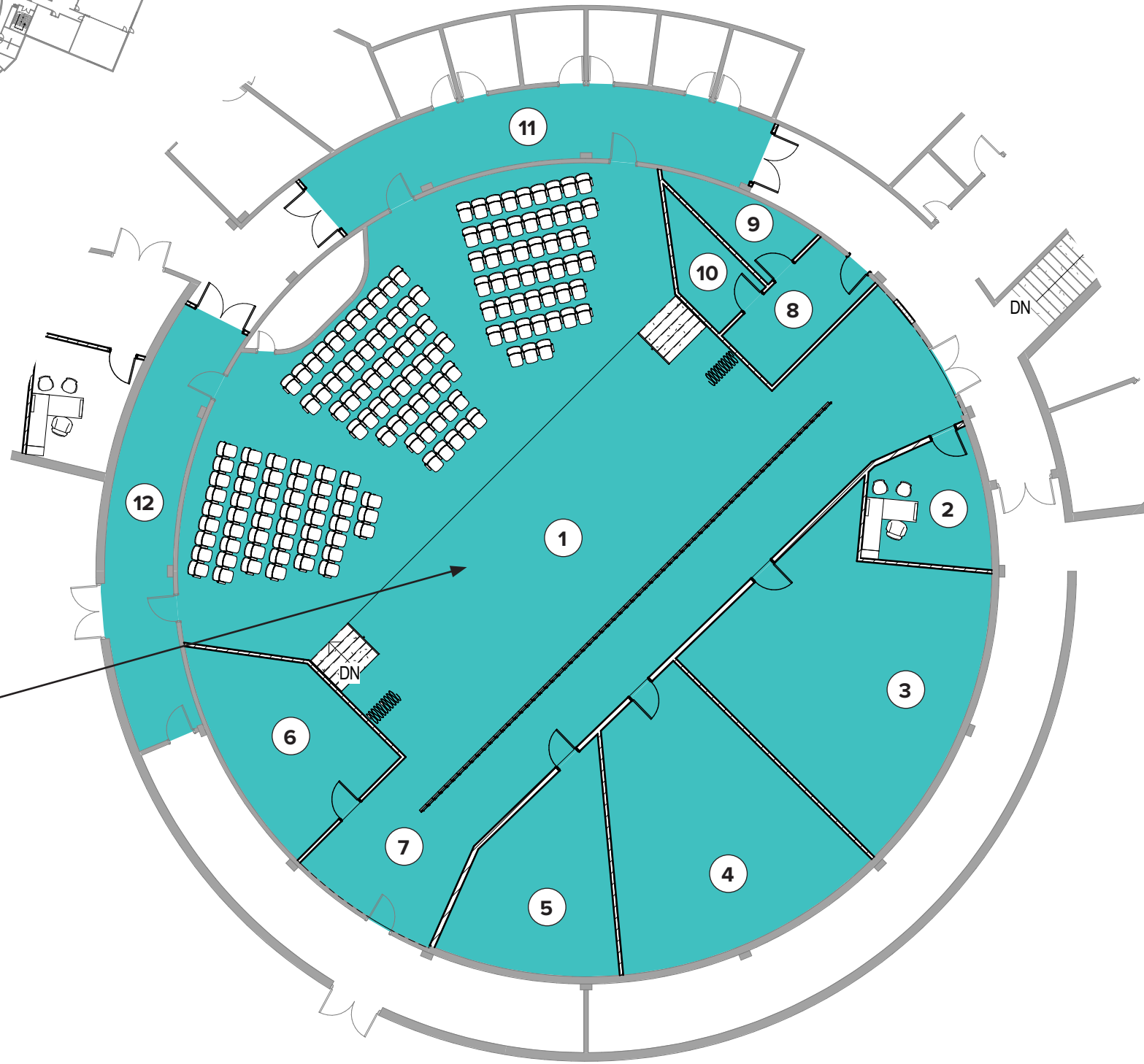
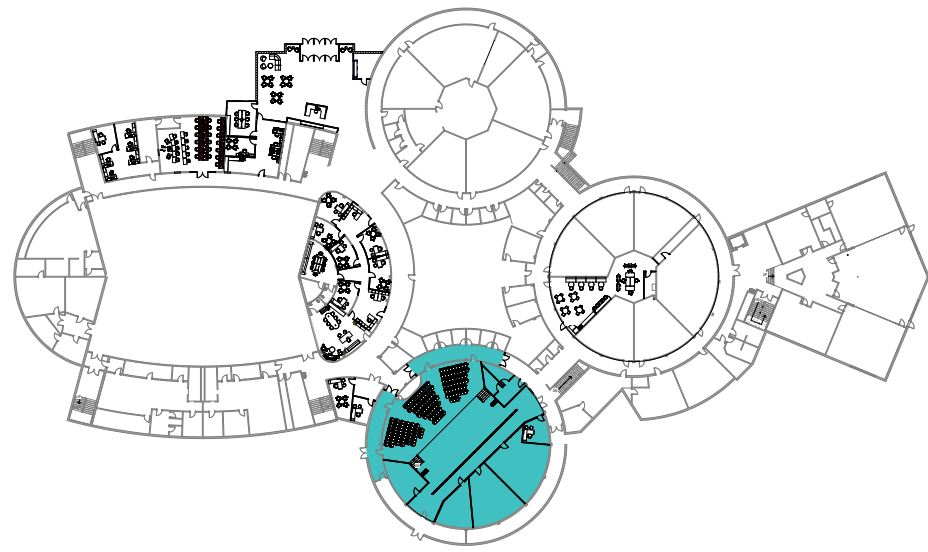
Proposed Floor Plan
Main Building - Second Floor

Priority 9 - Cook Theatre



REMOVE EXISTING THEATER FINISHES,
STAGE, SEATING, CAT WALK SYSTEM,
CEILING, ETC.

Current Floor Plan
Main Building - First Floor



ROOM	AREA
1	COOK THEATER 3960 SF
2	OFFICE 183 SF
3	PROP STORAGE 796 SF
4	DRESSING ROOM 655 SF
5	DRESSING ROOM 349 SF
6	THEATER STORAGE 323 SF
7	PRODUCTION 309 SF
8	KVCO RADIO 133 SF
9	STUDIO 90 SF
10	STUDIO 87 SF
11	VOMITORY 436 SF
12	VOMITORY 391 SF

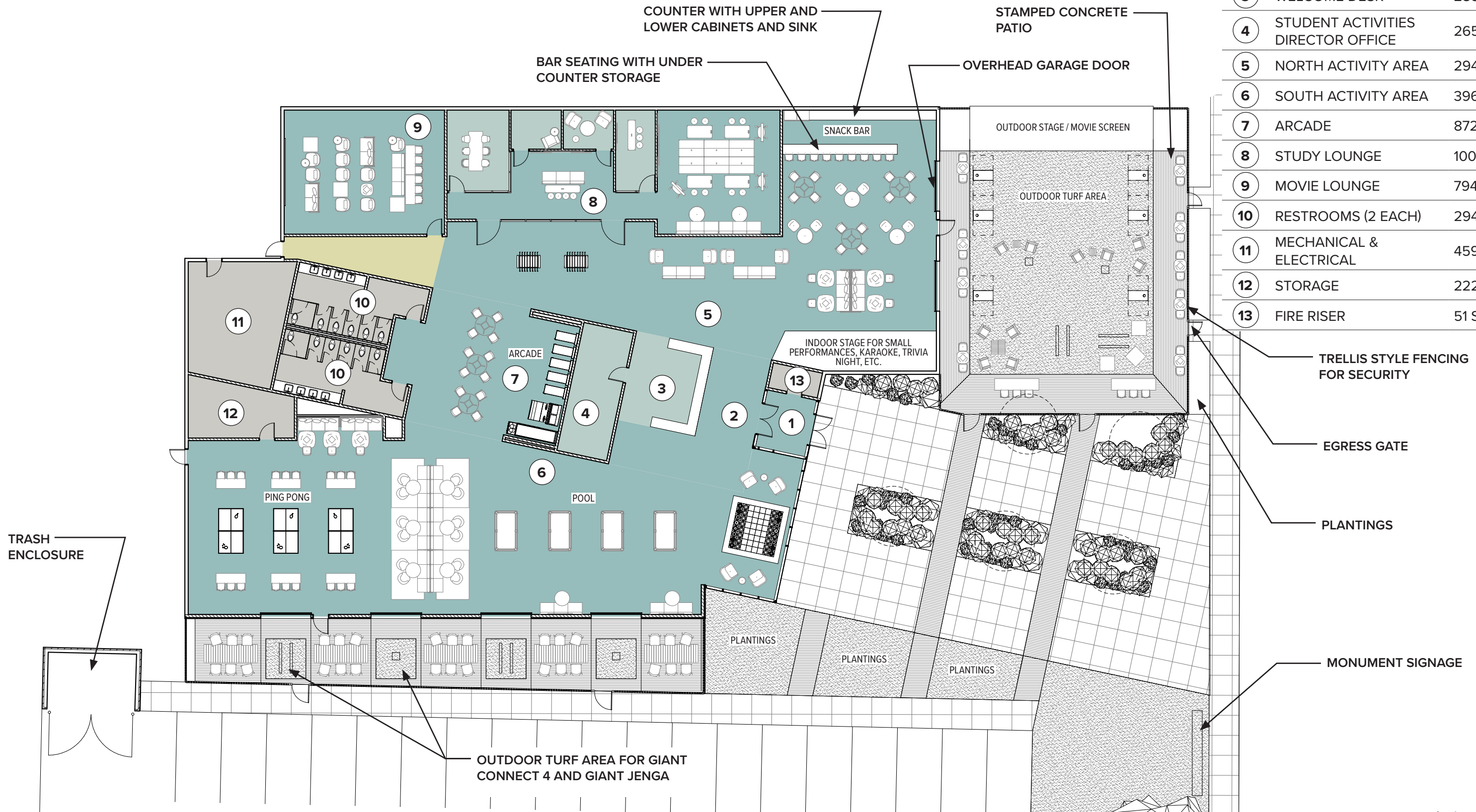
- RENOVATION OF COOK THEATER**
- ◆ New Seating (159 seats shown)
 - ◆ New Finishes
 - ◆ New Lighting and Acoustics
 - ◆ New Stage
 - ◆ New Curtains with Backdrop System
 - ◆ New Cat Walk System
 - ◆ Vestibule/vomitory Area
 - ◆ Additional Storage for Props
 - ◆ Additional Dressing Area
 - ◆ Mechanical Upgrade to Address Humidity and Temperature Issues
 - ◆ Additional Electrical Outlets

Proposed Floor Plan
Main Building - First Floor

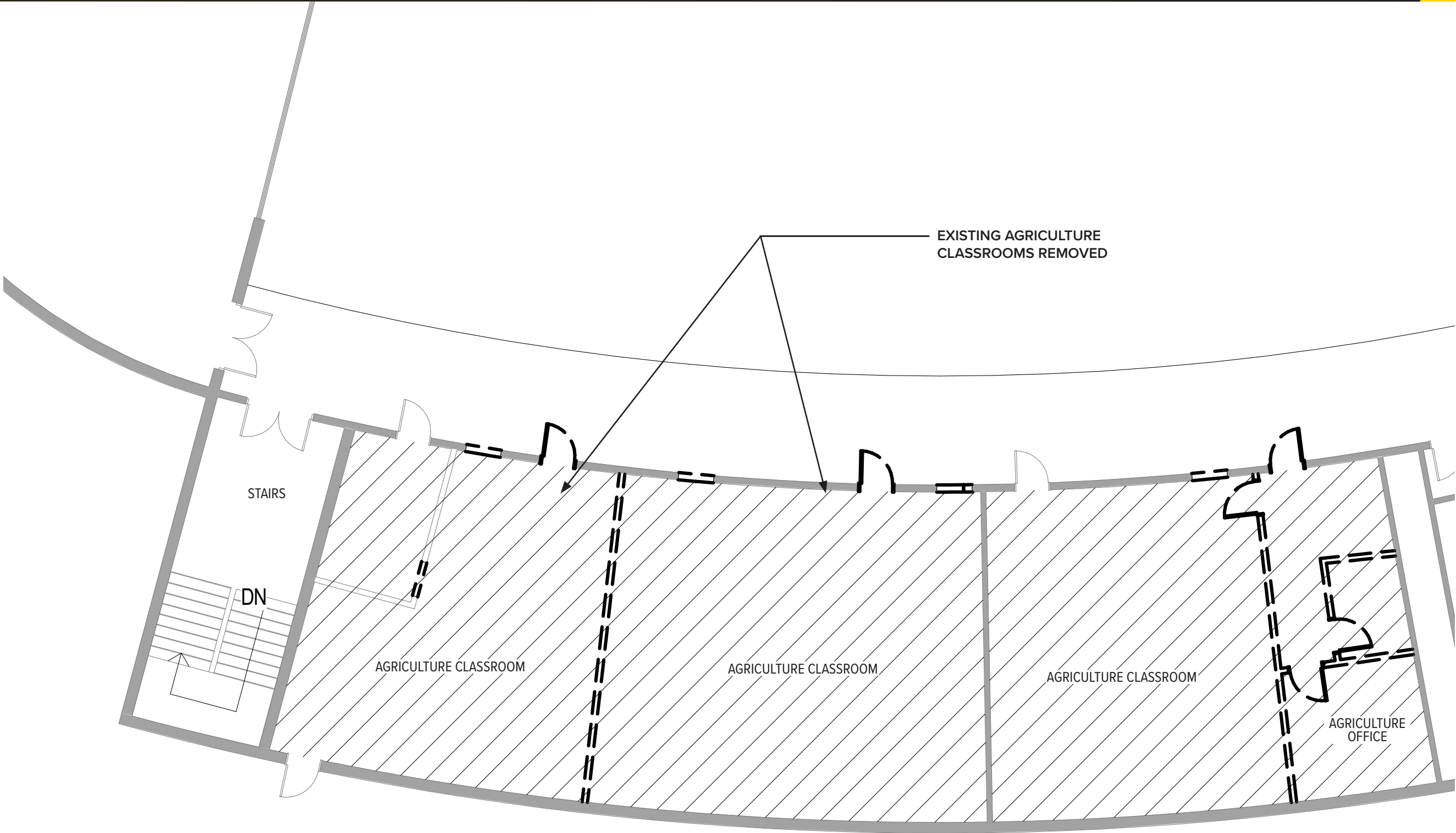
Priority 10 - New Student Engagement Center



ROOM	AREA
1	VESTIBULE 132 SF
2	LOBBY 462 SF
3	WELCOME DESK 285 SF
4	STUDENT ACTIVITIES DIRECTOR OFFICE 265 SF
5	NORTH ACTIVITY AREA 2941 SF
6	SOUTH ACTIVITY AREA 3961 SF
7	ARCADE 872 SF
8	STUDY LOUNGE 1001 SF
9	MOVIE LOUNGE 794 SF
10	RESTROOMS (2 EACH) 294 SF
11	MECHANICAL & ELECTRICAL 459 SF
12	STORAGE 222 SF
13	FIRE RISER 51 SF

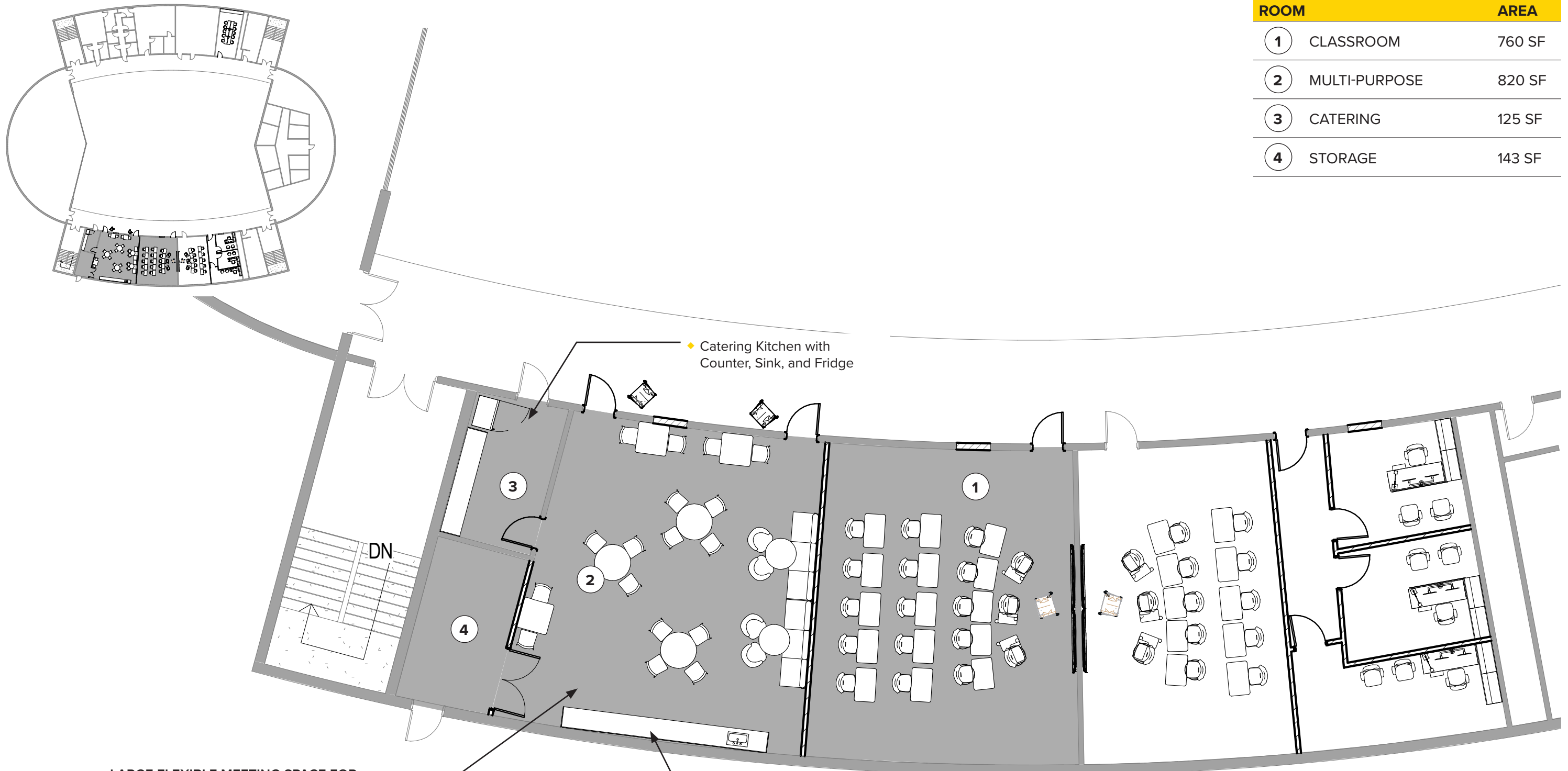


Priority 11 - New Multi-Purpose Space



Current Floor Plan
Main Building - Second Floor

ROOM	AREA
1 CLASSROOM	760 SF
2 MULTI-PURPOSE	820 SF
3 CATERING	125 SF
4 STORAGE	143 SF



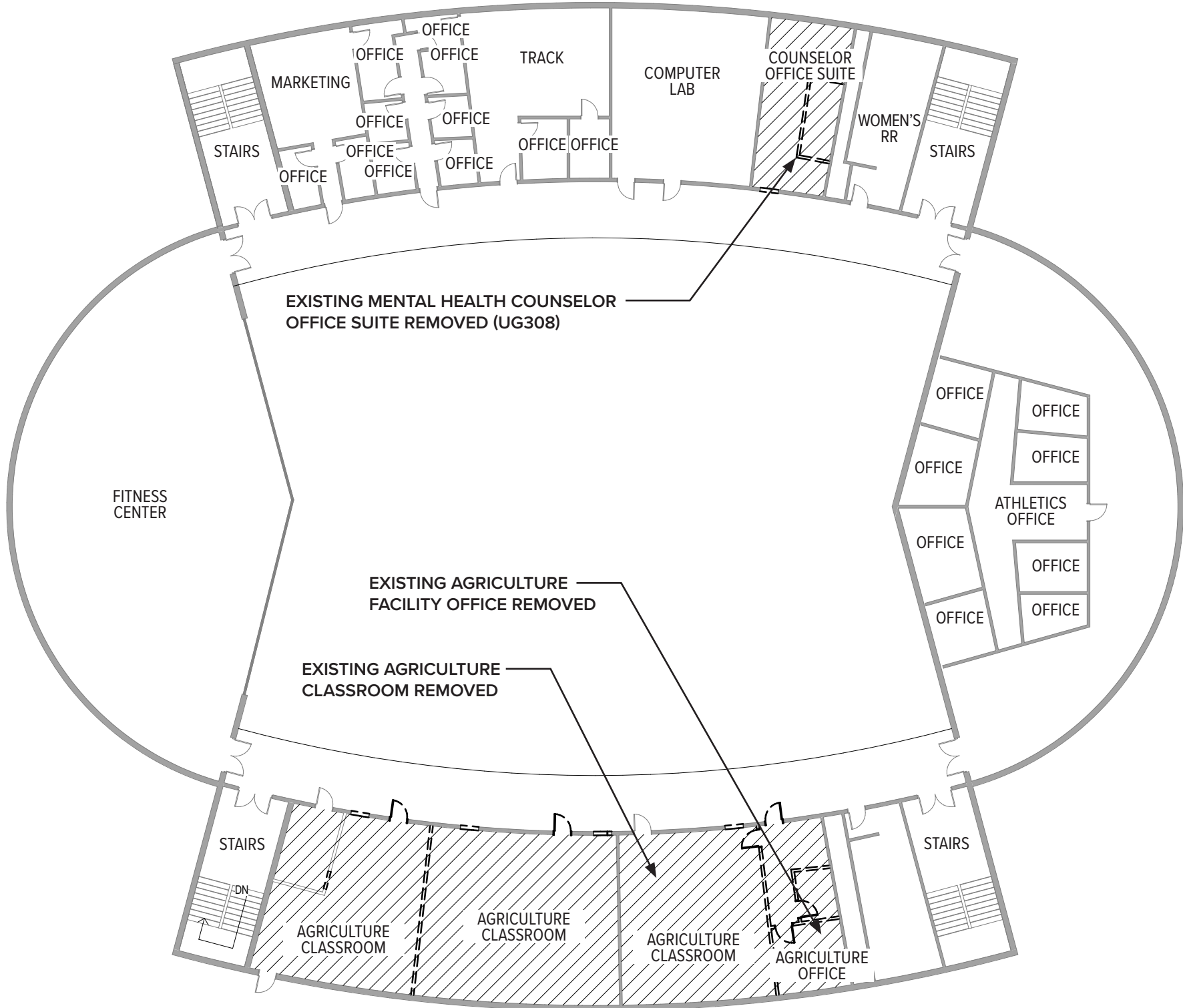
◆ Catering Kitchen with Counter, Sink, and Fridge

◆ Casework with Sink

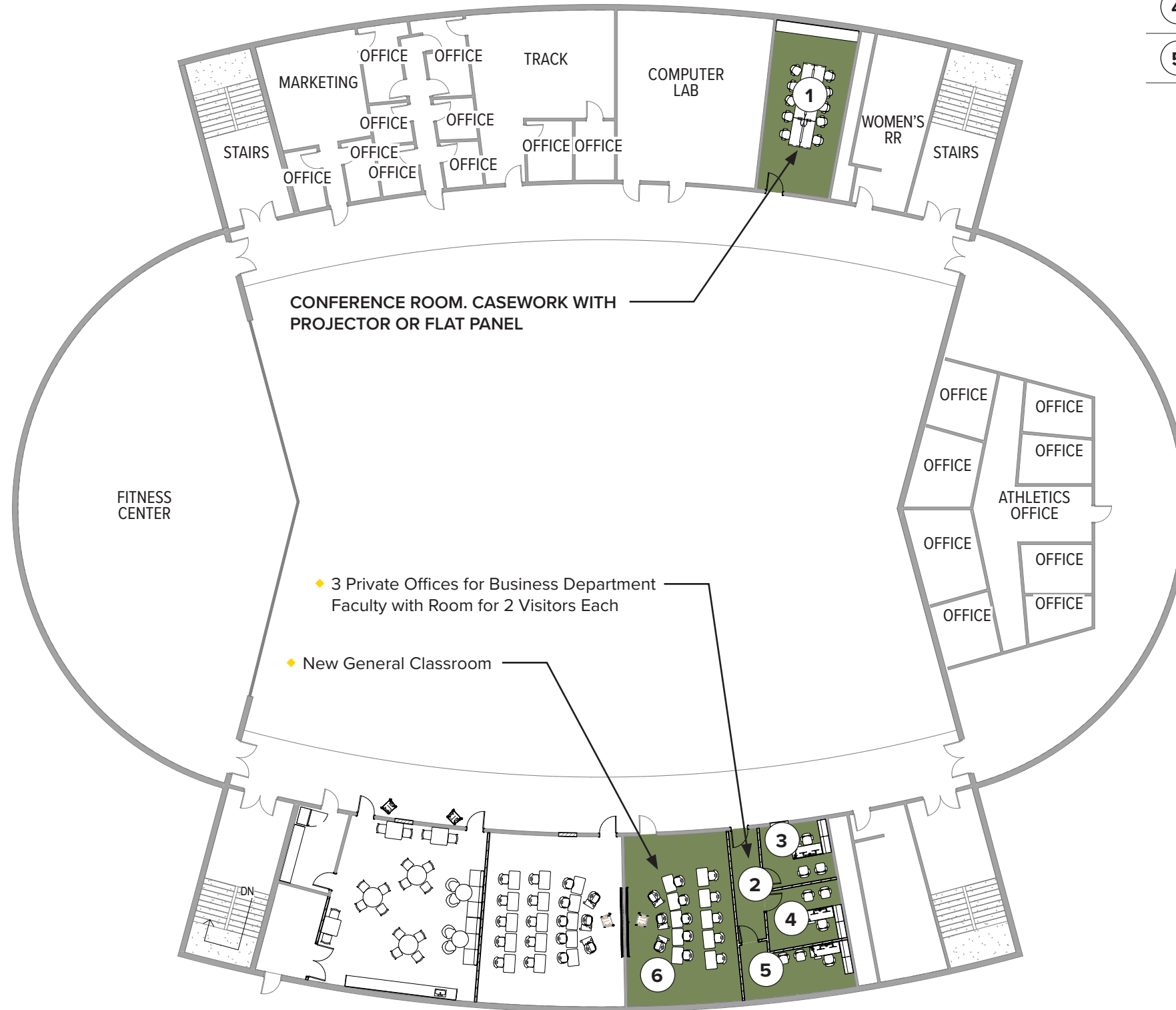
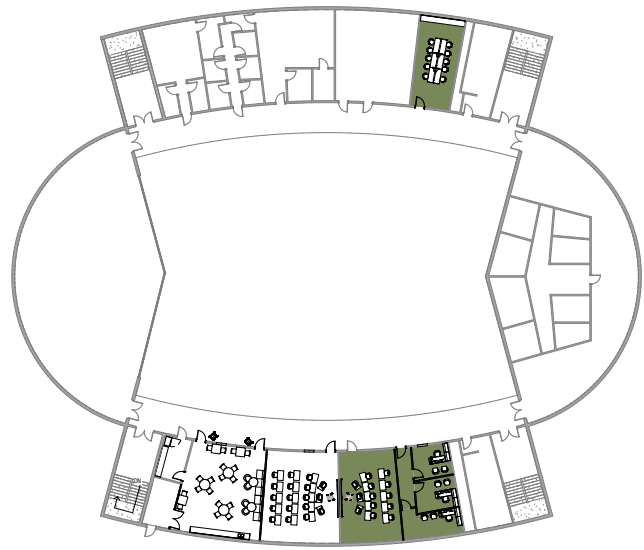
- LARGE FLEXIBLE MEETING SPACE FOR BOOSTER, DONOR, AND ALUMNI FUNCTIONS**
- ◆ TV's for Game Viewing
 - ◆ Movable Kiosk at Entry to Events
 - ◆ Space for Beverage Storage
 - ◆ Sink
 - ◆ Fridge to Store Food
 - ◆ Countertop with Ample Outlets for Food

Proposed Floor Plan
Main Building - Second Floor

Priority 12 - Business Faculty Department



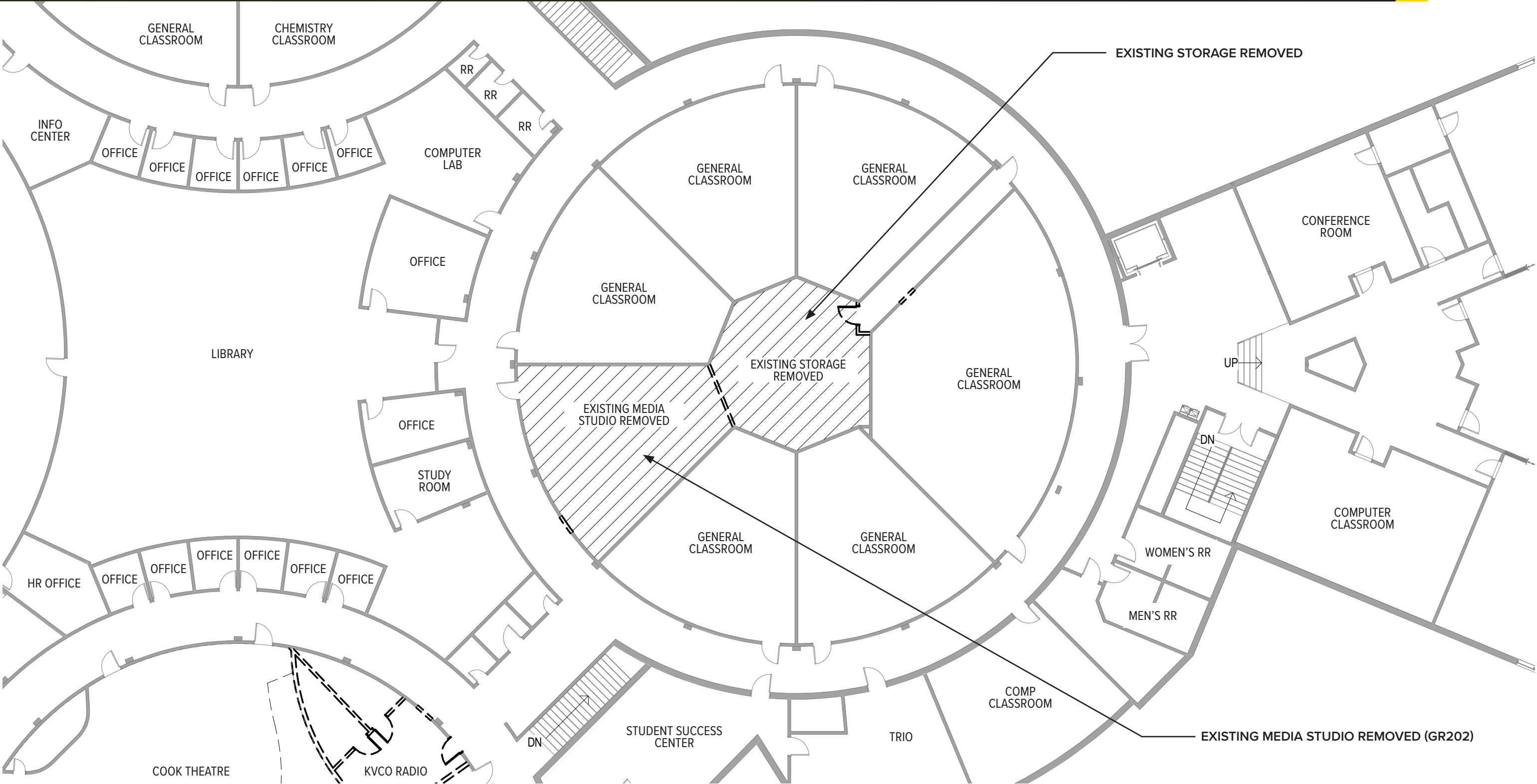
Current Floor Plan
Main Building - Second Floor



ROOM	AREA
1	CONFERENCE ROOM 418 SF
2	HALL 100 SF
3	OFFICE 135 SF
4	OFFICE 143 SF
5	OFFICE 170 SF

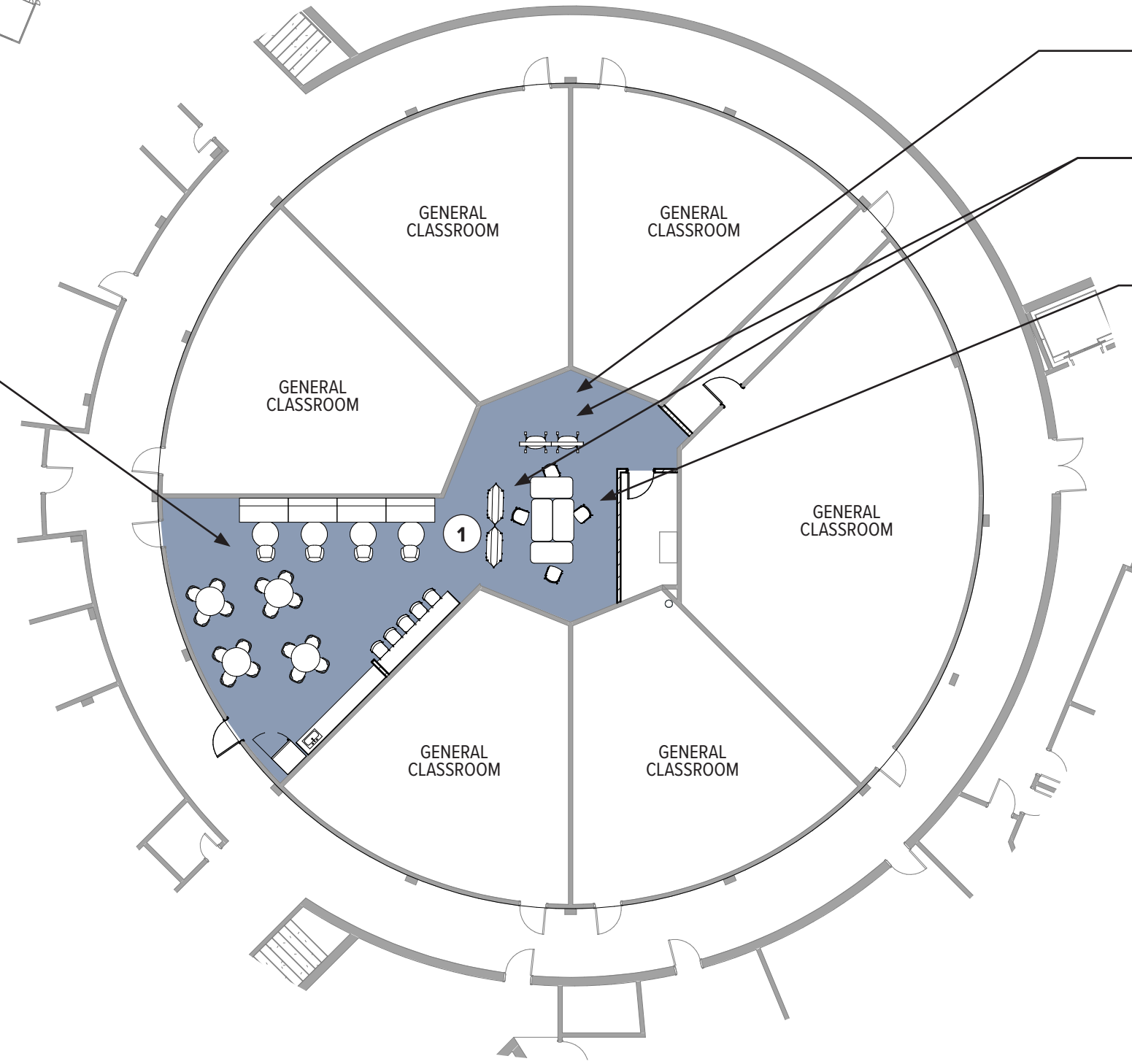
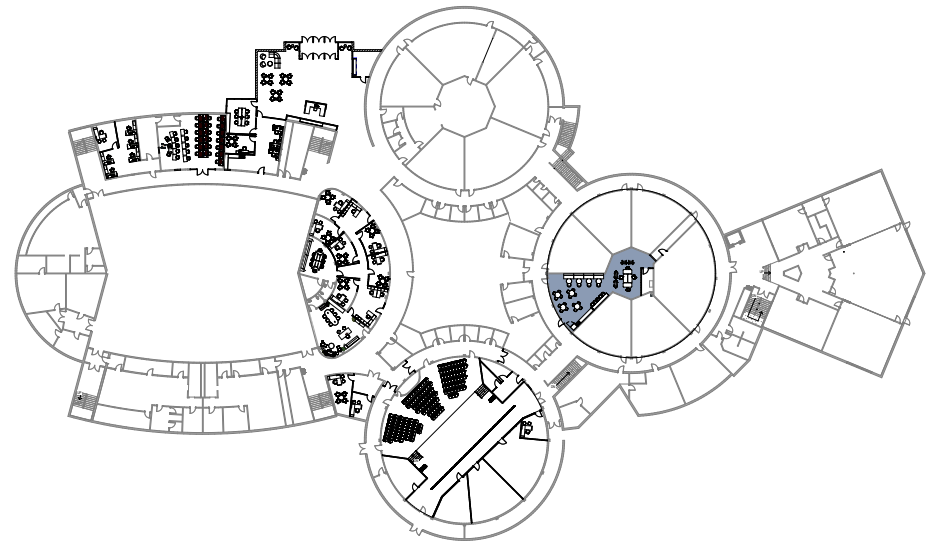
Proposed Floor Plan
Main Building - Second Floor

Priority 13 - New Faculty Collaboration Area



Current Floor Plan
Main Building - First Floor

ROOM	AREA
1	FACULTY COLLABORATION ZONE 1255 SF



- ◆ Lunch Space with Kitchenette Containing a Refrigerator, Microwave, and Sink.
- ◆ Various Types of Seating for Those Wishing to Meet/Eat in Groups or Individually for Focus

- ◆ Meeting/Collaboration Space that can be Separated Off from Lunch
- ◆ Movable, Writable and Tackable Surfaces to Divide Off Various Meeting Groups as Needed
- ◆ Flexible Furniture that can be Easily Moved into Different Seating Configurations for Collaboration

Proposed Floor Plan
Main Building - First Floor

Priority 14 - President's Suite Renovation



Current Floor Plan
Main Building - Lower Floor



ROOM	AREA
① RECEPTION	336 SF
② PRESIDENT'S OFFICE	649 SF
③ VP OF ACADEMIC AFFAIRS	189 SF
④ VP OF ADMIN SERVICES	213 SF
⑤ CONFERENCE	353 SF
⑥ HALL	221 SF
⑦ RECEPTION	230 SF
⑧ FOUNDATION DIRECTOR	229 SF
⑨ DIRECTOR OF ALUMNI RELATIONS	186 SF
⑩ OFFICE	186 SF
⑪ OFFICE	182 SF
⑫ HR WAITING	148 SF
⑬ HR OFFICE	246 SF
⑭ HR OFFICE	145 SF
⑮ OFFICE	176 SF

Proposed Floor Plan
Main Building - Lower Floor

Cloud County Community College Site Plan



Legend

- 1 New Technical Education and Innovation Center
- 2 New Main entrance and Welcome Center
- 3 Main Building (See Arch For Renovations)
- 4 New Athletic Facility
- 5 New Residence Hall
- 6 New Student Engagement Center
- 7 Dunning-Hamel Baseball Facility
- 8 Tech West
- 9 Tech East
- 10 T-Bird Village
- 11 Thunder Heights
- 12 Soccer and Softball Fields
- 13 Re-located Maintenance Building
- 14 Agriculture Building
- 15 Future Entry Sign
- P Parking



Cost Estimate of Master Plan

Priority No.	Description of Work	SF	Cost Per SF	Combined Total	1-Year Inflation 2024	5-Year Inflation 2028	10-Year Inflation 2033
Priority 1	Technical Education & Innovation Center	34,385	\$484.64	\$16,664,441.00	-	-	-
Priority 2	Front Entrance and Welcome Center	4,237	\$563.60	\$2,387,959.07	\$2,669,738.24	\$2,883,799.02	\$3,374,061.95
Priority 3	New Athletic Facility - Option A	40,692	\$330.93	\$13,466,203.60	\$15,055,215.60	\$16,259,632.80	\$19,023,770.40
	New Athletic Facility - Option B	25,062	\$330.93	\$8,293,748.00	\$9,212,410.26	\$10,014,203.10	\$11,716,617.60
Priority 4	New Residence Life Hall	26,370	\$479.85	\$12,653,624.09	\$14,146,751.74	\$15,281,044.48	\$17,878,912.63
Priority 5	Student Affairs and Services Area	5,370	\$348.62	\$2,694,797.06	\$3,012,783.11	\$3,254,349.38	\$3,807,608.07
Priority 6	Online and Outreach	3,615	\$410.12	\$1,482,583.49	\$1,657,528.34	\$1,790,429.68	\$2,094,813.34
Priority 7	IT Expansion	2,130	\$409.04	\$871,254.95	\$974,063.03	\$1,052,163.83	\$1,231,037.92
Priority 8	Faculty Offices	2,300	\$513.10	\$1,180,124.87	\$1,319,379.61	\$1,425,168.04	\$1,667,455.06
Priority 9	Cook Theatre	7,730	\$727.41	\$5,622,863.82	\$6,286,361.75	\$6,790,404.98	\$7,944,814.08
Priority 10	New Student Engagement Center	13,500	\$741.40	\$10,008,888.85	\$11,189,937.73	\$12,087,151.84	\$14,142,039.30
Priority 11	New Multi-purpose Space	1,887	\$419.97	\$792,487.70	\$886,001.25	\$957,041.21	\$1,119,743.89
Priority 12	Business Faculty Department	1,588	\$383.94	\$609,704.36	\$681,649.48	\$736,304.43	\$861,480.55
Priority 13	New Faculty Collaboration Area	1,255	\$398.08	\$499,585.30	\$558,536.37	\$603,320.06	\$705,888.04
Priority 14	President's Suite Renovation	3,825	\$406.27	\$1,553,970.76	\$1,737,339.31	\$1,876,639.94	\$2,195,679.85
	Sitework	-	-	\$5,060,561.79	\$5,657,708.08	\$6,111,345.59	\$7,150,310.56
	PROJECT TOTALS (with Priority 3 New Athletic Facility Option A)	148,884	\$507.43	\$75,549,050.71	\$65,832,993.64	\$71,108,795.28	\$83,197,615.64
	PROJECT TOTALS (with Priority 3 New Athletic Facility Option B)	133,254	\$528.13	\$70,376,595.11	\$59,990,188.30	\$64,863,365.58	\$75,890,462.84



COUNTY
COLLEGE

Appendix





Cloud County Community College Masterplan Development Concordia, Kansas

SD Narrative

Prepared For:
GLMV Architecture
Wichita, Kansas

PEC Project No.:
220446-000

Prepared by:
Brandon Claassen, PE (Mechanical)
Steve Vo, PE (Electrical)

Date:
July 19, 2022

MECHANICAL SYSTEMS

Student Engagement Center

The Student Engagement Center is a new, approximately 25,725 square foot, 2-story building planned for a greenfield site in Concordia, KS.

Fire Protection:

It is anticipated that a wet-pipe sprinkler system would be included in the design for a fully sprinklered building. For Schematic Design purposes, it is estimated that a 6" service line would be brought to the building at the fire riser room next to the main entrance. Water pressure information is not available at this time from the utility, so the need for a Fire Pump is not known. Sprinkler heads in lay in ceilings are proposed to be concealed type, while open ceiling heads would be of the pendant type. Consideration for the bowling alley may necessitate a dry-pipe component to the sprinkler system to avoid nuisance water damage to the wood lanes.

Plumbing:

A 3" domestic water service is anticipated to serve the building's water requirements. This service could be brought to the mechanical/electrical room at the back of house or could be housed in the Fire Riser room if expanded.

A natural gas service for the building is anticipated to serve the heating needs of the building for both domestic hot water and building comfort. The local utility provides the service to the building along with a meter, and then steel piping is distributed to the equipment loads.

Domestic Hot Water: A domestic hot water plant is anticipated to be comprised of two gas-fired tank type heaters (for redundancy). Due to the current limited number of fixtures requiring domestic hot water, a single tank may be considered. To ensure that hot water is readily available at all fixtures, a Domestic Hot Water Recirculation (DHWR) system comprised of a pump and piping is proposed for the building.

Domestic Water Piping: Domestic cold and hot water is proposed to be routed throughout the building to serve individual fixtures as laid out in the Architectural plans. Piping would be specified as copper with soldered or press fit fittings. Hose bibbs would be spaced at appropriate intervals along the exterior of the building for landscape and cleaning. A freeze proof hose bibb would be installed at the roof to accommodate cleaning of roof mounted equipment.

Sanitary Waste and Vent: A 4" sanitary sewer is anticipated for this building to handle building drains. Below grade, this piping is proposed to be PVC material, while piping above grade is proposed to be cast iron to facilitate the Return Air (RA) plenum. Vent piping throughout the facility would be cast iron, again to accommodate the RA plenum.

Roof drainage is anticipated to be via roof drains with internal rainleaders piped either to daylight at the exterior or tied to a site storm drain system. Overflow would also be internally drained and routed to daylight at the exterior of the building. Above grade piping interior to the building is proposed to be cast iron, with PVC piping below grade.

HVAC:

The HVAC system proposed for this building is Variable Air Volume (VAV) with hot water terminal reheat.

Airside:

A packaged DX Cooling/Gas Heat Roof Top Unit (RTU) is proposed and would be specified with the following features:

- Direct Drive, variable speed supply fan.
- Variable Capacity Compressors (VCC).
- Variable Capacity Condenser Fans.
- High Turn Down Modulating Gas-fired Furnace.
- Economizer/Free Cooling with Variable Speed Powered Exhaust.

The RTU would supply approximately 55 deg. primary air to the building that has been cooled and dehumidified in the warm season or pre-heated in the cold season. This primary air would be a mixture of recirculated Return Air (RA) and Outdoor Ventilation Air (OA) during typical operation. However, during relatively cool, dry periods, the RTU would be able to "Economize", utilizing the cool outside air to condition the building without using the DX system, saving energy. VAV terminal units receive the conditioned primary air from the RTU and supply it to the building zones for comfort. The VAV terminals would include a Hot Water Heating coil to provide heating to the individual zones and allows the HVAC system to provide both heating and cooling simultaneously.

Waterside:

A heating water plant is proposed to provide hot water for heating of the building. The plant would be comprised of two high efficiency condensing boilers (for redundancy), boiler (primary) pumps, system (secondary) pumps, and air and expansion tanks. Natural gas will be the fuel for the boilers. The heating system would modulate to supply 160 deg. heating water in the winter, and 110 deg. water in the summer for reheat. The heating water would be a 30% Propylene Glycol/70% Pure water mixture for freeze protection. The pumping strategy for the heating water would be constant volume primary with variable volume secondary. Primary pumps circulate the required water for the boilers while the secondary pumps circulate water out to the heating coils in the building. The building heating coils will mainly be composed of the VAV terminal reheat coils, which are responsible for zone level heating in the building.

Cloud County Community College Residence Hall

The Residence Hall is a new, approximately 26,000 SF two story building planned for a greenfield site in Concordia, KS.

Fire Protection:

It is anticipated that a wet-pipe sprinkler system would be included in the design for a fully sprinklered building. For Schematic Design purposes, it is estimated that a 6" service line would be brought to the building at the fire riser room next to the main entrance. Water pressure information is not available at this time from the utility, so the need for a Fire Pump is not known. Sprinkler heads in lay in ceilings are proposed to be concealed type, while open ceiling heads would be of the pendant type.

Plumbing:

A 4” domestic water service is anticipated to serve the building’s water requirements. This service could be brought to the centrally located MEP Riser room.

A natural gas service for the building is anticipated to serve the heating needs of the building for both domestic hot water and building comfort. The local utility provides the service to the building along with a meter, and then steel piping is distributed to the equipment loads.

Domestic Hot Water: A domestic hot water plant is anticipated to be comprised of two gas-fired, domestic water heating boilers (for redundancy) coupled with two storage tanks to handle the large shower demands. To ensure that hot water is readily available at all fixtures, a Domestic Hot Water Recirculation (DHWR) system comprised of a pump and piping is proposed for the building.

Domestic Water Piping: Domestic cold and hot water is proposed to be routed throughout the building to serve individual fixtures as laid out in the Architectural plans. Piping would be specified as copper with soldered or press fit fittings. Hose bibbs would be spaced at appropriate intervals along the exterior of the building for landscape and cleaning. A freeze proof hose bibb would be installed at the roof to accommodate cleaning of roof mounted equipment.

Sanitary Waste and Vent: A 6” sanitary sewer is anticipated for this building to handle building drains. Below grade, this piping is proposed to be PVC material, while piping above grade is proposed to be cast iron to facilitate the Return Air (RA) plenum. Vent piping throughout the facility would be cast iron, again to accommodate the RA plenum.

Roof drainage is anticipated to be via roof drains with internal rainleaders piped either to daylight at the exterior or tied to a site storm drain system. Overflow would also be internally drained and routed to daylight at the exterior of the building.

HVAC:

The HVAC system proposed for this building is Variable Air Volume (VAV) with hot water terminal reheat, similar to the system described for the Student Engagement Center above.

Airside:

A packaged DX cooling/gas heating VAV RTU would provide primary air to the VAV terminals serving each zone. The VAV terminals meter the primary air to the space to maintain space temperature. When the space temperature is satisfied, the terminal unit air damper would go to zero airflow to save energy. If the space temperature is below the setpoint, the VAV terminal would open the air damper up and heat the primary air via the reheat coil. Ventilation air for the building would be provided by Packaged Dedicated Outdoor Air System RTUs with integral exhaust fans and total enthalpy wheels. The DOAS units would deliver the required ventilation air to the spaces allowing the VAV terminals to be shut-off boxes, conserving fan energy and reducing the need for reheat. The integral exhaust fans in the DOAS units would exhaust the required amount of air from the building while exchanging energy with the wheel, reducing the required equipment capacity and saving energy.

Waterside:

A heating water plant is proposed to provide hot water for heating of the building. The plant would be comprised of two high efficiency condensing boilers (for redundancy), boiler (primary) pumps, system (secondary) pumps, and air and expansion tanks. Natural gas will be the fuel for the boilers. Control of the system would be similar to that described for the Student Engagement Center described above. The building heating coils will mainly be composed of the VAV terminal reheat coils, which are responsible for zone level heating in the building.

Cloud County Community College Main Campus Building

The original three-story building was constructed in the mid to late 1960’s. Following are the approximate areas of the floors.

- Ground Floor - 9,600 sq. ft.
- First Floor – 34,000 sq. ft.
- Second Floor – 11,800 sq. ft.
- Total – 55,400 sq. ft.

In the late 1990’s the President’s Addition was built onto the northeast portion of the original building. This building is also three stories with the following approximate floor areas.

- Ground Floor – 8,400 sq. ft.
- Lower Floor – 9,100 sq. ft.
- First Floor – 9,100 sq. ft.
- Total – 26,600 sq. ft.

An HVAC replacement project was completed around 2010. This project replaced the HVAC systems in in the original building and installed a geothermal ground coupled heat pump to generate chilled water and heating water. According to the design drawings, the geothermal well field is comprised of 74 boreholes arranged in a 7x12 pattern located south of the building in a grassy area. Each borehole was specified to be 400’ deep with 1” HDPE pipe and thermally enhanced grout.

Proposed Floor Plan – Lower Floor – President’s Addition:

The Lower Floor (Ground Level) is served by horizontally mounted, split system furnaces located above the ceilings of the space. The furnaces are gas-fired with natural gas routed in the ceiling space as well. The DX cooling coils associated with each split system are connected to exterior air cooled condensers located at grade.

The proposed changes in this area are twofold.

- Item #6 of the SD Architectural plans: Remodel for Online & Outreach, GED and Testing, and Assessment.
- Item “New Opportunity” from the SD Architectural plans: Remodel to relocate the Media Center and a remodel to provide a quiet student study space with lounge furniture.

The five existing split systems serving the Item #6 area are all beyond their expected service life and are recommended for replacement. The “Item #6” area is currently comprised of five separate spaces served by three of the split systems. The proposed layout is now seven spaces. If the Owner desires improved zoning for individual controls in each space, a system change to VRF could be an option. The “Opportunity” area is currently served by two split systems and is one large space. The proposed layout is now split into two medium sized spaces. Replacing the two split systems with new should be appropriate.

Plumbing impacts with the proposed work appear to be minimal.

Proposed Floor Plan – Ground Floor – Main Building:

The ground floor of the building is served by four pipe Air Handling Units (AHUs) in a single zone configuration. The two AHUs reside in mechanical rooms and distribute ductwork to the spaces above ceilings.

The proposed changes in the area are twofold.

- Item #5 of the SD Architectural plans: Remodel of most of the core spaces within the central round pod.
- Item "Faculty Office" from the SD Architectural plans: Remodel of the SE round pod.

Based on a 12-year service life, we expect the existing equipment to have approximately half of its service life remaining. There does not appear to be a compelling reason to replace the equipment at this time. The existing ductwork distribution could be reworked with new ceiling Grilles, Registers, and Diffusers (GRDs) to accommodate the new floor plan layout. The proposed layout is broken into more individual rooms as compared with existing. This is anticipated to lead to comfort issues since only one thermostat controls large swaths of the building. The AHUs could be replaced with VAV AHUs serving VAV terminal units with Hot Water reheat coils to improve zone control.

Plumbing impacts with the proposed work appear to be minimal.

Proposed Floor Plan – First Floor – Main Building:

The first floor of the building is served by four pipe Air Handling Units (AHUs) in a single zone configuration as well as four pipe Unit Ventilators (UVs). AHUs are generally located in mechanical rooms with UV's exposed in rooms.

The proposed changes for the floor include (all from the SD Architectural Plans):

- Item #2. New Main Entrance and Welcome Center
- Item #4. New Faculty Collaboration Zone
- Item #7. Expansion of IT Department
- Item #10. Renovation of faculty offices
- Item #11. Renovation of the Cook Theater
- Item #15. President's Suite Renovation

Item #2 is an approximately 4,100 sq. ft. addition to the building, enhancing the front entrance and housing the welcome center, an office, and a conference room. This new square footage is proposed to be served by a Packaged VAV RTU with DX Cooling and Gas Heating. The unit would be specified in a similar manner to the unit described for the Student Engagement Center above. The RTU would supply primary air to VAV Reheat Terminals that meter out cold or warm air to the individual zones for occupant ventilation and comfort. New plumbing for this area appears to be limited to any fixtures required by the refreshment center behind the welcome desk. Roof drainage is anticipated to be via roof drains with internal rainleaders piped either to daylight at the exterior or tied to a site storm drain system. Overflow would also be internally drained and routed to daylight at the exterior of the building. Above grade piping interior to the building is proposed to be cast iron, with PVC piping below grade. Natural gas piping would be extended from the main building to the addition for connection to the RTU.

Item #4 for the Faculty Collaboration Zone would continue to be served by the four pipe, single zone AHUs installed in the 2010 HVAC replacement with minimal modifications. There does not appear to be any plumbing scope associated with this remodel.

Item #7 for the expansion of the IT Department is currently served by four pipe UVs. These UVs are proposed to be replaced due to the increased loading the IT and eSports functions generate. Currently split systems supplement this area, specifically in the Server room. Additional split units are proposed as required to accommodate the load. Plumbing for this area would be limited to condensate drains for the new HVAC equipment.

Item #10 for the renovation of faculty offices is served by four pipe AHUs located above the ceilings in four locations. Based on a 12-year service life, we expect the existing equipment to have approximately half of its service life remaining. There does not appear to be a compelling reason to replace the

equipment at this time. The existing ductwork distribution could be reworked with new ceiling Grilles, Registers, and Diffusers (GRDs) to accommodate the new floor plan layout. The proposed layout is broken into more individual rooms as compared with existing. This is anticipated to lead to comfort issues since only one thermostat controls large swaths of the building. The AHUs could be replaced with VAV AHUs serving VAV terminal units with Hot Water reheat coils to improve zone control.

Item #11 for the Renovation of the Cook Theater is currently served by four pipe AHUs. It has been reported that temperature and humidity control, as well as HVAC noise is a problem for this space. Currently one AHU serves the theater, while two smaller AHUs serve the smaller perimeter spaces all with a single zone control strategy. Expansion of the mechanical room housing the large air handler to accommodate a larger AHU with the ability to actively dehumidify the space with a Hot Water Reheat coil is recommended for improved temperature and humidity control. Installation of sound attenuators at the supply and return connections to this unit, as well as selection of quiet GRDs is expected to reduce HVAC noise in the space. Based on a 12-year service life, we expect the existing AHUs serving the smaller, perimeter rooms to have approximately half of their service life remaining. There does not appear to be a compelling reason to replace the equipment at this time. The existing ductwork distribution could be reworked with new ceiling Grilles, Registers, and Diffusers (GRDs) to accommodate the new floor plan layout.

Item #15 for the President's Suite Renovation is served by a four pipe AHU located in a mechanical room. Based on a 12-year service life, we expect the existing equipment to have approximately half of its service life remaining. There does not appear to be a compelling reason to replace the equipment at this time. The existing ductwork distribution could be reworked with new ceiling Grilles, Registers, and Diffusers (GRDs) to accommodate the new floor plan layout. The proposed layout is broken into more individual rooms as compared with existing. This is anticipated to lead to comfort issues since only one thermostat controls the suite. The AHU could be replaced with a VAV AHU serving VAV terminal units with Hot Water reheat coils to improve zone control.

Plumbing impacts with the proposed work appear to be minimal.

Proposed Floor Plan – Second Floor – Main Building:

The second floor of the building is served by four pipe Air Handling Units (AHUs) in a single zone configuration as well as four pipe Unit Ventilators (UVs). AHUs are generally located in mechanical rooms with UV's exposed in rooms.

The proposed changes for the floor include (all from the SD Architectural Plans).

- Item "New Opportunity"
- Item #8. New Business Faculty Department
- Item #9. New Multi-Purpose Space
- Item #10. Renovation of faculty offices

Areas on the south side of the second level are served by a four pipe AHU and UV's. Areas on the north side of the second level are served by two four pipe AHUs on either end. Based on a 12-year service life, we expect the existing equipment to have approximately half of its service life remaining. There does not appear to be a compelling reason to replace the equipment at this time. The existing ductwork distribution could be reworked with new ceiling GRDs to accommodate the new floor plan layout. To improve zoning, the AHUs could be replaced with VAV AHUs serving VAV terminal units with Hot Water reheat coils to improve zone control.

Plumbing impacts with the proposed work appear to be minimal.

ELECTRICAL SYSTEMS

Student Engagement Center

Power Distribution:

This building (approximately 25,725-square feet) will be served by a pad mounted utility transformer which could presumably reside to the west of the building. It is suggested that if aesthetics are of concern, that this piece of equipment reside behind a screen wall or similar structure.

It is anticipated that the proposed service will be a 1,600-Amp, 208Y/120-Volt, 3-Phase, 4-Wire electrical service (with a main breaker) served from the proposed pad mounted transformer. This main distribution service will be located within the space designated as “Mechanical/Electrical” on the current plans. From this location, power infrastructure will be distributed throughout the facility at strategic locations as needed. With the proposed building layout, it is anticipated that infrastructure will be located in the referenced room on the First Floor and within the Mechanical Storage room indicated on the Second Floor.

It is intended that the 208Y/120-Volt service will serve all loads within the building, including HVAC, lighting, common receptacle loads, controls, and miscellaneous equipment as dictated by the End Users.

At this time, there is no current indication that an emergency standby generator is needed nor desired.

General Electrical Distribution:

All feeders will be sized based on copper and sized for the full ampacity of the overcurrent device from which it is fed. Aluminum feeders will be allowed for any feeders greater than 200-Amps or #3/0 AWG. Below grade conduits shall be PVC. Where conduits turn up through concrete and above grade, PVC wrapped RGS ells and risers will be used. Any circuit breakers 400-Amps and larger shall be adjustable electronic trip.

All branch circuits shall be in conduit; MC cable will be allowed within spaces and only where stud framed walls are expected. Raceways for electrical distribution shall be held as tight to structure as possible in open ceiling areas. In all exposed conditions, conduits shall be routed together and, to the best of the Contractor’s ability, following in a manner that is consistent with the building lines and architecture.

All panelboards and associated circuit breakers shall be fully rated. Distribution gear shall be rated for the environment where it is to be installed. In all cases, NEC required working clearances shall be maintained.

Receptacles shall be “specification grade” and shall be 15-Amp and 20-Amp as required; all dedicated receptacles shall be 20-Amp. All receptacles located within 6-feet of a sink, or as otherwise prescribed by NEC Article 210, shall be GFCI protected, whether locally protected or at the circuit breaker. Devices located exterior of the building or in wet locations shall be listed as “weather-resistant” and be provided with weatherproof “in-use” covers. Where needed due to End User request or as dictated by Code, floor boxes with appropriate devices will be located as needed. Any floor boxes specified will be multi-service type and be gasketed (mop rated).

There will be no need for isolated ground receptacles or associated circuits within the building.

Interior Building Lighting:

All lighting shall utilize solid state LED technology, be capable of 0-10-Volt dimming and be 4000K color temperature with a minimum of <80CRI.

General interior lighting will consist of a mixture of recessed/surface mounted light fixtures and recessed downlights, where applicable. In locations where the architect/designer desires a higher aesthetic, fixtures will be coordinated and specified accordingly. Utility spaces, such as janitors’ rooms, will be provided with strip utility lighting fixtures.

Emergency lighting (if no generator is provided) shall be via 90-minute emergency battery drivers that will be integral to light fixtures or 90-minute “bug eye” type fixtures located throughout.

Illumination levels will follow IES recommendations and meet or exceed all requirements for egress illumination per the NFPA 101.

Lighting Controls:

Where applicable, multiple levels of control will be provided to allow for space flexibility. In spaces such as electrical/mechanical rooms or other such utility spaces, manual toggle switches with no dimming capabilities will be used.

Throughout the facility, all light fixture circuits will be controlled with standalone (non-networked) occupancy sensors or schedule-based controls that can be altered by the end user via local LAN interface. Spaces that have electrical or mechanical equipment will not have occupancy or time-based control.

In spaces with audio-visual needs, lighting and lighting controls will be coordinated and integration will be investigated to simplify system usage for the End User.

Exterior / Site Lighting:

Building mounted and site lighting shall consist of LED fixtures to accent the architectural elements as needed, while providing adequate lighting for the safety of occupants and visitors. Exterior lighting shall be controlled by an astronomical timeclock/photocell located on the building. Exterior lighting will all be 3000K (or as agreed upon otherwise during design) color temperature and shall be controlled as needed to adhere to any restrictions regarding light spill or otherwise due to the location of the facility.

Telephone / Data Systems:

The building will have an MDF located on the First Floor, within the Mechanical/Electrical room and from equipment within this room be distributed throughout to IDF’s as needed. It is intended that the IDF’s house equipment to distribute telecommunications services to the general area of the building where the IDF’s reside.

All low voltage cabling installation will adhere to BICSI standards. Cabling distances shall not exceed 295-feet.

Fire Alarm / CCTV / Security / Access Controls:

It is anticipated that the following systems will be required for this building: fire alarm, CCTV, access controls, and building security system. PEC will facilitate this discussion and design of pathways and infrastructure needed to allow for design of CCTV, access control, and security system pathways. System design, including architecture, device specification, etc. will need to be by the appropriate system vendor (as selected by the Owner) during this design process.

It is anticipated that the fire alarm system will be based on a standard horn/strobe system that will be installed per NFPA 72.

Audio-Visual Systems:

The audio-visual needs will be determined with End User as programming of the individual spaces within this facility are undertaken.

Cloud County Community College Residence Hall

Power Distribution:

This building (approximately 26,000-square feet) will be served by a pad mounted utility transformer which could presumably reside to the north side of the building, adjacent to either electrical room indicated on the plans. It is suggested that if aesthetics are of concern, that this piece of equipment reside behind a screen wall or similar structure.

It is anticipated that the proposed service will be a 1,200-Amp, 208Y/120-Volt, 3-Phase, 4-Wire electrical service (with a main breaker) served from the proposed pad mounted transformer. This main distribution service can be located within either of the spaces designated as “Electrical Closet” on the current plans. From this location, power infrastructure will be distributed throughout the facility at strategic locations as needed. With the proposed building layout, it is anticipated that infrastructure will be located in the referenced Electrical rooms on the First Floor and within similar rooms or areas on the Second Floor.

It is intended that the 208Y/120-Volt service will serve all loads within the building, including HVAC, lighting, common receptacle loads, controls, and miscellaneous equipment as dictated by the End Users.

At this time, there is no current indication that an emergency standby generator is needed nor desired.

General Electrical Distribution:

All feeders will be sized based on copper and sized for the full ampacity of the overcurrent device from which it is fed. Aluminum feeders will be allowed for any feeders greater than 200-Amps or #3/0 AWG. Below grade conduits shall be PVC. Where conduits turn up through concrete and above grade, PVC wrapped RGS ells and risers will be used. Any circuit breakers 400-Amps and larger shall be adjustable electronic trip.

All branch circuits shall be in conduit; MC cable will be allowed within spaces and only where stud framed walls are expected. Raceways for electrical distribution shall be held as tight to structure as possible in open ceiling areas. In all exposed conditions, conduits shall be routed together and, to the best of the Contractor’s ability, following in a manner that is consistent with the building lines and architecture.

All panelboards and associated circuit breakers shall be fully rated. Distribution gear shall be rated for the environment where it is to be installed. In all cases, NEC required working clearances shall be maintained.

Receptacles shall be “specification grade” and shall be 15-Amp and 20-Amp as required; all dedicated receptacles shall be 20-Amp. All receptacles located within 6-feet of a sink, or as otherwise prescribed by NEC Article 210, shall be GFCI protected, whether locally protected or at the circuit breaker. Devices located exterior of the building or in wet locations shall be listed as “weather-resistant” and be provided with weatherproof “in-use” covers. Where needed due to End User request or as dictated by Code, floor boxes with appropriate devices will be located as needed. Any floor boxes specified will be multi-service type and be gasketed (mop rated).

There will be no need for isolated ground receptacles or associated circuits within the building.

Where dictated by Code, receptacles shall be tamper-proof and will be protected with arc-fault circuit breakers.

Interior Building Lighting:

All lighting shall utilize solid state LED technology, be capable of 0-10-Volt dimming and be 4000K color temperature with a minimum of <80CRI.

General interior lighting will consist of a mixture of recessed/surface mounted light fixtures and recessed downlights, where applicable. In locations where the architect/designer desires a higher aesthetic, fixtures will be coordinated and specified accordingly. Utility spaces, such as janitors’ rooms, will be provided with strip utility lighting fixtures.

Emergency lighting (if no generator is provided) shall be via 90-minute emergency battery drivers that will be integral to light fixtures or 90-minute “bug eye” type fixtures located throughout.

Illumination levels will follow IES recommendations and meet or exceed all requirements for egress illumination per the NFPA 101.

Lighting Controls:

Single level control will be provided in each living space, it is anticipated that light fixtures in these areas will be on/off only and that no dimming will be desired. In spaces such as electrical/mechanical rooms or other such utility spaces, manual toggle switches with no dimming capabilities will be used. The Conference Room, Office, and Lounge spaces will each be provided with dimming capabilities to allow for more flexibility in those areas.

Throughout the facility, all light fixture circuits will be controlled with standalone (non-networked) occupancy sensors or schedule-based controls that can be altered by the end user via local LAN interface. Residence rooms will be designed based on a “vacancy sensor” setup. Spaces that have electrical or mechanical equipment will not have occupancy or time-based control.

In spaces with audio-visual needs, lighting and lighting controls will be coordinated and integration will be investigated to simplify system usage for the End User.

Exterior / Site Lighting:

Building mounted and site lighting shall consist of LED fixtures to accent the architectural elements as needed, while providing adequate lighting for the safety of occupants and visitors. Exterior lighting shall be controlled by an astronomical timeclock/photocell located on the building. Exterior lighting will all be 3000K (or as agreed upon otherwise during design) color temperature and shall be controlled as needed to adhere to any restrictions regarding light spill or otherwise due to the location of the facility.

Telephone / Data Systems:

The building will have a Communications Room located on the First Floor. From equipment within this room, telecommunications cabling and services shall be distributed throughout the building. It is not anticipated that additional IDF rooms will be needed in this building unless desired by IT personnel.

All low voltage cabling installation will adhere to BICSI standards. Cabling distances shall not exceed 295-feet.

Fire Alarm / CCTV / Security / Access Controls:

It is anticipated that the following systems will be required for this building: fire alarm, CCTV, access controls, and building security system. PEC will facilitate this discussion and design of pathways and infrastructure needed to allow for design of CCTV, access control, and security system pathways. System design, including architecture, device specification, etc. will need to be by the appropriate system vendor (as selected by the Owner) during this design process.

It is anticipated that the fire alarm system will be based on a standard horn/strobe system that will be installed per NFPA 72.

Audio-Visual Systems:

The audio-visual needs will be determined with End User as programming of the individual spaces within this facility are undertaken.

Main Building Remodel and Addition

Power Distribution:

This building is currently served by two pad mounted utility transformers which reside to the east/northeast of the building.

The primary (and older) existing service is a 208Y/120-Volt service that serves the majority of the loads within the building, including HVAC, lighting, common receptacle loads, controls, and miscellaneous equipment as dictated by the End Users. The newer service is a 480-Volt service that serves hydronic pumps that were installed as part of the HVAC Replacement Project performed in 2010.

There is no emergency standby power available to the site.

With the remodel areas in mind, there will be a need to consider existing panelboard locations and conditions in the following areas: Ground Floor Faculty Office (101A), panels adjacent to New Student Services areas; First Floor KYCO Radio (242) and E-Sports Lounge (BL231), panels adjacent to President's Suite, New Main Entrance, Faculty Collaboration, and Computer Lab areas; Second Floor panels adjacent to offices. Panels in these areas, depending on desired connections, may have physical space or capacity limitations. Additionally, certain pieces of the distribution equipment may be at or near its rated useful life and it is recommended that those pieces be removed and replaced.

General Electrical Distribution:

Any new or replaced feeders will be sized based on copper and sized for the full ampacity of the overcurrent device from which it is fed. Aluminum feeders will be allowed for any feeders greater than 200-Amps or #3/0 AWG. It is not anticipated that the remodel work will require below grade raceways other than those for possible floor boxes; however, all below grade conduits shall be PVC unless specifically denoted. No circuit breakers larger than 200-Amp are anticipated for the remodel work or to serve infrastructure.

All branch circuits shall be in conduit; MC cable will be allowed within spaces and only where stud framed walls are expected. Raceways for electrical distribution shall be held as tight to structure as possible in open ceiling areas. In all exposed conditions, conduits shall be routed together and to the best of the Contractor's ability, following in a manner that is consistent with the building lines and architecture.

Any added panelboards and associated circuit breakers shall be fully rated. Distribution gear shall be rated for the environment where it is to be installed, in this particular case, NEMA 1 for all equipment located interior of the building and NEMA 3R for all gear located exterior of the building. In all cases, NEC required working clearances shall be maintained.

Receptacles shall be "specification grade" and shall be 15-Amp and 20-Amp as required; all dedicated receptacles shall be 20-Amp. All receptacles located within 6-feet of a sink, or as otherwise prescribed by NEC Article 210, shall be GFCI protected, whether locally protected or at the circuit breaker. Devices located exterior of the building or in wet locations shall be listed as "weather-resistant" and be provided with a weatherproof "in-use" covers. Where needed due to End User request or as dictated by Code, floor boxes with appropriate devices will be located as needed. Any floor boxes specified will be multi-service type and be gasketed (mop rated).

There will be no need for isolated ground receptacles or associated circuits within the building.

Interior Building Lighting:

All lighting shall utilize solid state LED technology, be capable of 0-10-Volt dimming, and be 4000K color temperature with a minimum of <80CRI.

General interior lighting will consist of a mixture of recessed/surface mounted light fixtures and recessed downlights, where applicable. In locations where the architect/designer desires a higher aesthetic, fixtures will be coordinated and specified accordingly. Utility spaces, such as janitors' rooms, will be provided with strip utility lighting fixtures.

Illumination levels will follow IES recommendations and meet or exceed all requirements for egress illumination per the NFPA 101.

Lighting Controls:

Where applicable, multiple levels of control will be provided to allow for space flexibility. In spaces such as electrical/mechanical rooms or other such utility spaces, manual toggle switches with no dimming capabilities will be used.

Throughout the facility, all light fixture circuits will be controlled with standalone (non-networked) occupancy sensors or schedule-based controls that can be altered by the end user via local LAN interface. Spaces that have electrical or mechanical equipment will not have occupancy or time-based control.

In spaces with audio-visual needs, lighting and lighting controls will be coordinated and integration will be investigated to simplify system usage for the End User.

Exterior / Site Lighting:

Any added or replaced building mounted and site lighting shall consist of LED fixtures to accent the architectural elements as needed, while providing adequate lighting for the safety of occupants and visitors. Exterior lighting shall be controlled by an astronomical timeclock/photocell located on the building. Exterior lighting will all be 3000K (or as agreed upon otherwise during design) color temperature and shall be controlled as needed to adhere to any restrictions regarding light spill or otherwise due to the location of the facility.

Telephone / Data Systems:

It is understood that the College is in the middle of a telecommunications infrastructure update. Part of the work is understood to be the addition of new IDFs throughout the facility with updated telecommunications racks and associated UPS units. From discussion with Staff, the existing MDF (and telecommunications service entrance) resides on the north side of the building in the existing IT Department area. The desire is that this will remain intact.

A major consideration will be that Staff believes that there is a fiber optic telecommunications service line that is routed below grade in the general vicinity where the proposed New Main Entrance is planned. It is recommended that, as part of the infrastructure update, the fiber optic line (if being relocated) be coordinated with the extents of the proposed construction limits to allow the line to reside beyond this area to avoid damage.

All low voltage cabling installation will adhere to BICSI standards. Cabling distances shall not exceed 295-feet.

Fire Alarm / CCTV / Security / Access Controls:

It is anticipated that the following existing systems will need to be modified as renovation/additions are to be performed: fire alarm, CCTV, access controls, and building security system. PEC will facilitate this discussion and design of pathways and infrastructure needed to allow for design of CCTV, access control, and security system pathways. System design, including architecture, device specification, etc. will need to be by the appropriate system vendor (as selected by the Owner) during this design process.

It is anticipated that the fire alarm system will be based on a standard horn/strobe system that will be installed per NFPA 72.

Audio-Visual Systems:

The audio-visual needs will be determined with End User as programming of the individual spaces within this facility are undertaken.







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