



University of Colorado
Denver

North Classroom Building Renovation

PROGRAM PLAN | AUGUST 15, 2013

University of Colorado Denver
Office of Institutional Planning



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I. Executive Summary

The North Classroom building opened in 1987, and in many ways signaled a new era for the University of Colorado Denver (CU Denver) on the Auraria Campus. The building was intended to be the main base of operations for the Denver Campus, replacing the Tramway Building at 14th and Arapahoe in that capacity.

Nearly 30 years after the building opened, the University of Colorado Denver remains the predominant user of the North Classroom building, and the experience of many CU Denver students, faculty and staff is still influenced by their impressions of North Classroom building. Of the 166,269 assignable square feet in the building, 149,475 are allocated to or controlled by the University of Colorado Denver.

At 257,500 gross square feet, the North Classroom building is the third largest building on the Auraria Campus. When its 42 general assignment classrooms are full, the collective classroom capacity of the building totals 2,550 students.

The North Classroom Building Renovation includes the renovation of three areas in the building that have changed little if at all since 1987; the main building atrium that runs along Lawrence Way, 34 of the general assignment classrooms on the first, second and third floors, and departmental spaces for the College of Liberal Arts and Sciences (CLAS).

The building atrium renovation is driven by both aesthetic and functional needs. Finishes in the atrium that are dated and are beginning to show their age will be updated. At the same time, space will be reconfigured to provide areas more conducive for gathering and informal group study.

The general assignment classrooms that are included in the project all require improvements in five areas - technology, furnishings, lighting, ADA accommodations,

and aesthetic improvements such as paint and flooring. Other areas that will be explored for improvement in these classrooms include room layouts, seating density, and introducing natural light into classrooms.

The scope of the CLAS renovations was developed using two criteria; spaces that had not been renovated since the building opened in 1987, and spaces not already slated for renovation in one of the other projects planned for North Classroom. Other renovations are planned for North Classroom as part of the Academic Building 1 project (currently underway), the FY 16-17 Engineering and Physical Science Project, and the FY 14-15 Capital Renewal request.

The North Classroom building project is a cash funded project, and has a total budget of \$10,928,636.

The atrium and CLAS renovations will follow a two year schedule from the time funding is committed to completion and move-in. The classroom portion of the renovation is anticipated to take an additional 18 months so that classrooms may be taken offline in small groups and during the summer semesters and winter breaks.

II. Introduction and Background

a. Institutional Background

i. History

In 1912, the University of Colorado established an extension division in Denver. In 1964, the extension division was renamed the University of Colorado Denver Center and was granted the authority to offer undergraduate and graduate degree programs. In 1973, the University of Colorado Board of Regents established the University of Colorado System to be led by a president and comprised of four distinct and independently accredited institutions: University of Colorado Boulder, University of Colorado at Denver, University of Colorado Colorado Springs and University of Colorado Health Sciences Center. In 1977, the University of Colorado at Denver moved to its current location in Downtown Denver as part of an innovative multi-institutional campus known as the Auraria Higher Education Center (AHEC).

In 2004, the University of Colorado Board of Regents approved the consolidation of the University of Colorado at Denver and the University of Colorado Health Sciences Center into a single institution. The consolidated university was initially named the University of Colorado at Denver and Health Sciences Center, and subsequently in 2007, was renamed the University of Colorado Denver—one institution with two campuses. Within the last twenty years, the university has expanded downtown beyond the boundaries of the Auraria Campus and into the fabric of the city through strategic acquisition of real estate in the central business district. Today, the Denver Campus of the University of Colorado Denver enrolls 14,271 students and employs 1,500 faculty members. Students can choose from among 134 degree programs housed within seven academic schools and colleges. CU Denver features the only college of architecture in Colorado and the largest graduate schools for business and education. CU Denver confers more graduate degrees than any other public higher education institution in Colorado.

ii. Mission and Vision

In 2007, the University of Colorado Denver undertook a

strategic planning effort, the result of which was entitled Strategic Plan 2008 - 2020 University of Colorado Denver. The strategic plan contemplated the future of the university in the context of two major decisions that had been made in the previous ten years - building the Anschutz Medical Campus and consolidating the University of Colorado at Denver in downtown Denver with the University of Colorado Health Sciences Center. The new mission for the consolidated university and the supporting narrative that were developed in the plan are below.

Mission

The University of Colorado Denver is a diverse teaching and learning community that creates, discovers, and applies knowledge to improve the health and well-being of Colorado and the world. The mission statement frames our commitment not just to teaching our students but also to their learning as part of a community. It emphasizes the educational richness that we believe comes from diversity of thought and experience. It emphasizes that the creation and discovery of knowledge must, where appropriate, be applied to the needs of communities and society,



The North Classroom building.

including their health, general well-being, and quality of life. It emphasizes that we seek not only to be seen as a world-class university but also to have a profound impact throughout Colorado and the nation through our service activities. The strategic plan also offered a vision of what the University of Colorado Denver might look like in 2020. The vision and supporting narrative from the strategic plan are listed below.

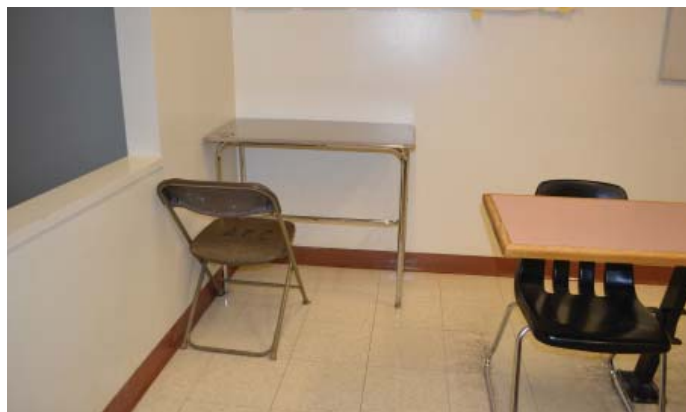
Vision

By 2020, the University of Colorado Denver will be a leading public university with a global reputation for excellence in learning, research and creativity, community engagement, and clinical care. The vision statement is not modest. We have bold ambitions on behalf of the people of Colorado. We want them to have a leading public research university that has earned a global reputation for four interconnected cornerstones of excellence: teaching and learning, research and creativity, community engagement, and clinical care. Very few universities have accomplished all four. This is our vision to achieve.

b. Program

i. Program Narratives

The North Classroom Building Renovation project is composed of three primary elements: A renovation of the main atrium, renovation of 34 general assignment classrooms, and renovations for the College of Liberal Arts and Sciences in selected department areas. Each is described in greater detail below. They are also depicted graphically on page nine.



Non-compliant ADA seating in North Classroom.

Atrium Renovation

The atrium of North Classroom, which totals 14,656 square feet and rises two stories, is one of the largest public spaces on the Auraria Campus. In addition to providing a means of circulation between and amongst the many classrooms in the building, it is also a very popular gathering area and is commonly used for public events such as blood drives, orientation events, award ceremonies, and student project presentations. However, the space is very dated and the current furnishings and setup do not allow for the type of group interaction that is common now on many college campuses. The atrium renovation will include the following:

- New furnishings that would encourage group interaction.
- Creating study areas that are insulated from the noise of the main circulation area.
- Adding power within and around the seating for charging computers and portable devices.
- Adding printing stations where students can print wirelessly.
- Adding kitchenette areas where students can heat up food.
- Removing the old newspaper racks that include out of date institutional names.
- Improving the signage, including adding digital signage.
- New carpet and paint.

General Assignment Classroom Renovation

This portion of the project includes updates to 34 of the general assignment classrooms in the building. It excludes the new classrooms that were created as part of the



Dated North Classroom atrium kiosk.

Auraria Science Building project. There are five elements that will be addressed in all of the classrooms:

1. Technology Upgrades
2. New Furnishings
3. ADA Compliance Issues
4. Lighting Upgrades
5. Aesthetic Improvements - Paint, Flooring, etc.

In addition, the following will be considered in classrooms based on feasibility, pedagogy, and their effect on the overall classroom capacity of the university:

1. Introducing natural light into the classroom.
2. Moving the teaching wall location to improve sight lines.
3. New furniture combinations to provide additional work space for students and improve classroom flexibility.
4. Altering room layouts to help improve pedagogy.
5. Decreasing classroom density to improve the learning environment and provide more comfort to the students.

CLAS Renovations

One of the goals for this project was to update any space in the building that has not been renovated or updated in any significant way since the building was opened. The gold areas shown on the diagram at right met that criteria. This space is currently assigned to three departments within the College of Liberal Arts and Sciences- Physics, Psychology, and Geography and Environmental Sciences. Descriptions of these departments are below. Some of the space included for renovation is currently assigned to Metropolitan State University of Denver’s (MSUD) Physics Department, and some of it is shared between the physics departments of MSUD and CU Denver. More detailed occupancy information is provided in *Section II.b.ii Existing Space Information*, page 7. *Section III.b. Project Assumptions*, page 20, provides more information about the assumptions regarding the inclusion of the MSUD Physics department space in this project.

Geography and Environmental Sciences (GES)

Geographers attempt to identify the factors affecting the distribution of people and their activities on the surface of the earth and to provide meaningful solutions to

Space Type Diagram

- Atrium Renovations
- General Assignment Classroom Renovations
- CLAS Renovations

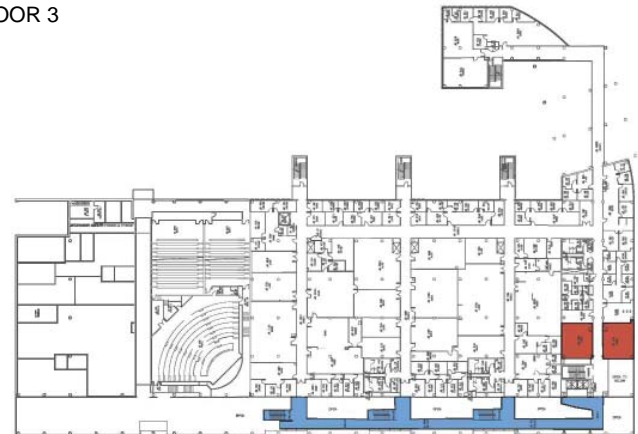
FLOOR 5



FLOOR 3



FLOOR 2



FLOOR 1



problems faced by societies. It's an ideal major for those who want to explore concepts and techniques utilized in investigating environmental issues, socioeconomic challenges, and planning policies.

For undergraduates, GES offers:

- A Bachelor of Arts degree with five options for specialization, including urban studies, environmental studies, environmental science, earth science, and a general approach
- Four minor options: environmental sciences, geography, geology, and urban & regional planning.

For graduate students, GES offers:

- An MS in Environmental sciences with specialization options in air quality, environmental health, ecosystems, sustainability, water quality, geo-spatial analysis and environmental science education
- Certificates for those not in the program in the specialization options.

Physics

CU Denver's Physics faculty are committed to providing substantive applied research experiences for our undergraduate students. Students work elbow-to-elbow with their professor mentors on such projects as:

- Applying chaos and complex systems theory to problems ranging from the onset of turbulence in fluid flows to the erratic motions of loads hanging from cranes aboard ships at sea
- Study of quasar jets and other associated dynamic properties, supernovae and nucleosynthesis
- Superconducting Quantum Interference Devices (SQUIDs), specifically the fabrication of microelectronic SQUIDs
- Expert evaluation of environmental issues (particularly arsenic contamination in groundwater and neutron detection) at locations around the world
- Research in magnetic resonance, magnetic resonance imaging, interacting spin systems and iterative maps

Psychology

The Department of Psychology at the University of Colorado Denver is a mid-sized department with over 700 majors. They have two undergraduate degree programs (BA and BS) and a PhD program in Clinical Health Psychology. The faculty and staff provide educational and research experiences and clinical training to students seeking advancement through higher education and eventual employment in psychology and related fields. The department also builds bridges to the Anschutz Medical Campus to broaden the students' research and educational opportunities. Much of this department's mission focuses on two vital areas of



An advisor meeting with a student.



Students walking in North Classroom.

research and scholarship carried out by the nationally and internationally recognized faculty: clinical health psychology and behavioral neuroscience.

ii. Existing Space Summary

The summary of existing space within the project area has been broken down into the three distinct project components.

Atrium Renovation

The existing atrium space that lies within the project area totals 14,656 square feet. This includes a portion of the first floor atrium and all of the second floor atrium.

General Assignment Classroom Renovation

The space chart below shows the existing CU Denver classroom space allocation that lies within the project area. It includes 31 classrooms ranging in size from 35 seats to 285 seats. This does not include the three classrooms within the project area that are currently assigned to MSUD. These are, however, included in the project area as outlined in *Section III.c. Space Program and Project Diagrams* (page 21). The total square footage of these classrooms combined is 28,503, and the total seat capacity is 1,958 seats.

North Classroom Renovation Existing Space Summary General Assignment Classrooms				
Room Number	Square Footage	Room Type	Allocation	Capacity
1130	4,842	114 - Classroom: Extra-Large (101 & above Students)	UCD	285
1539	2,265	114 - Classroom: Extra-Large (101 & above Students)	UCD	168
1535	1,851	114 - Classroom: Extra-Large (101 & above Students)	UCD	120
1207	1,132	113 - Classroom: Large (50 - 100 Students)	UCD	95
1202	1,060	113 - Classroom: Large (50 - 100 Students)	UCD	72
1204	991	113 - Classroom: Large (50 - 100 Students)	UCD	72
1607	914	113 - Classroom: Large (50 - 100 Students)	UCD	72
1806	938	113 - Classroom: Large (50 - 100 Students)	UCD	67
1408	834	113 - Classroom: Large (50 - 100 Students)	UCD	55
1511	728	113 - Classroom: Large (50 - 100 Students)	UCD	55
1515	689	113 - Classroom: Large (50 - 100 Students)	UCD	55
1315	680	112 - Classroom: Medium (36 - 49 Students)	UCD	48
1402	900	112 - Classroom: Medium (36 - 49 Students)	UCD	48
1602	942	112 - Classroom: Medium (36 - 49 Students)	UCD	48
1603	881	112 - Classroom: Medium (36 - 49 Students)	UCD	48
1605	886	112 - Classroom: Medium (36 - 49 Students)	UCD	48
3004	676	111 - Classroom: Small (1 - 35 Students)	UCD	48
1325	673	112 - Classroom: Medium (36 - 49 Students)	UCD	47
2001	618	112 - Classroom: Medium (36 - 49 Students)	UCD	47
2002	616	112 - Classroom: Medium (36 - 49 Students)	UCD	47
1326	488	112 - Classroom: Medium (36 - 49 Students)	UCD	42
1313	535	112 - Classroom: Medium (36 - 49 Students)	UCD	40
1314	494	112 - Classroom: Medium (36 - 49 Students)	UCD	40
1321	533	112 - Classroom: Medium (36 - 49 Students)	UCD	40
1323	535	112 - Classroom: Medium (36 - 49 Students)	UCD	40
1324	494	112 - Classroom: Medium (36 - 49 Students)	UCD	36
1322	445	111 - Classroom: Small (1 - 35 Students)	UCD	35
1311	504	112 - Classroom: Medium (36 - 49 Students)	UCD	35
1312	450	112 - Classroom: Medium (36 - 49 Students)	UCD	35
1316	488	111 - Classroom: Small (1 - 35 Students)	UCD	35
1533	421	112 - Classroom: Medium (36 - 49 Students)	UCD	35
TOTAL	28,503			1,958

CLAS Renovations

The existing College of Liberal Arts and Sciences space that lies within the project area is broken down below by the three departments that are part of this project: Geography and Environmental Sciences, Physics, and Psychology.

Geography and Environmental Sciences

Overall the Department of Geography and Environmental Sciences (GES) has 11,348 square feet of space on the campus in two buildings; St. Cajetans and North Classroom. In North Classroom, GES occupies 9,530 square feet. The chart below lists the existing GES space that lies within the area of the North Classroom Building Renovation Project. The total is 2,143 square feet, which is primarily office space, but does include one research laboratory.

North Classroom Renovation Existing Space Summary CLAS Renovation-GES					
Room Number	College	Department	% Ownership	Square Footage (ASF)	Space Type
3619	CLAS	GES	100	192	250 - Research Laboratory
			<i>Subtotal</i>	192	
3619A	CLAS	GES	100	79	255 - Research Laboratory Service
			<i>Subtotal</i>	79	
3421	CLAS	GES	100	103	310 - General Office
3421A	CLAS	GES	100	113	310 - General Office
3522	CLAS	GES	100	113	310 - General Office
3524	CLAS	GES	100	113	310 - General Office
3524A	CLAS	GES	100	103	310 - General Office
3526A	CLAS	GES	100	103	310 - General Office
3528	CLAS	GES	100	220	310 - General Office
3620	CLAS	GES	100	113	310 - General Office
3621	CLAS	GES	100	214	310 - General Office
3621A	CLAS	GES	100	228	310 - General Office
3621B	CLAS	GES	100	138	310 - General Office
3622	CLAS	GES	100	95	310 - General Office
			<i>Subtotal</i>	1656	
3522A	CLAS	GES	100	103	315 - Office Service
3526	CLAS	GES	100	113	315 - Office Service
			<i>Subtotal</i>	216	
			TOTAL	2143	

Physics

Overall the Department of Physics has 6,488 square feet of space on the campus, all within North Classroom. The chart below lists the existing Physics space that lies within the area of the North Classroom Building Renovation Project. The total is 5,030 square feet, and includes a variety of space types.

North Classroom Renovation Existing Space Summary CLAS Renovation-Physics					
Room Number	College	Department	Ownership	Square Footage (ASF)	Space Type
3111F	CLAS	PHYS	UCD	105	210 - Class Lab
3604	CLAS	PHYS	Shared	529	210 - Class Lab
3609	CLAS	PHYS	Shared	161	210 - Class Lab
3606	CLAS	PHYS	Shared	447	210 - Class Lab
			<i>Subtotal</i>	<i>1242</i>	
3608	CLAS	PHYS	Shared	340	215 - Class Lab Service
3609A	CLAS	PHYS	Shared	57	215 - Class Lab Service
3610	CLAS	PHYS	Shared	209	215 - Class Lab Service
3610A	CLAS	PHYS	Shared	111	215 - Class Lab Service
3115	CLAS	PHYS	UCD	214	220 - Open Laboratory
			<i>Subtotal</i>	<i>931</i>	
3601	CLAS	PHYS	UCD	397	250 - Research Laboratory
3603	CLAS	PHYS	UCD	326	250 - Research Laboratory
3605	CLAS	PHYS	UCD	326	250 - Research Laboratory
3611	CLAS	PHYS	Shared	57	250 - Research Laboratory
			<i>Subtotal</i>	<i>1106</i>	
3111A	CLAS	PHYS	UCD	97	310 - General Office
3111B	CLAS	PHYS	UCD	101	310 - General Office
3111C	CLAS	PHYS	UCD	103	310 - General Office
3111D	CLAS	PHYS	UCD	103	310 - General Office
3111E	CLAS	PHYS	UCD	116	310 - General Office
3801	CLAS	PHYS	UCD	250	310 - General Office
3801A	CLAS	PHYS	UCD	152	310 - General Office
3803	CLAS	PHYS	UCD	108	310 - General Office
3805	CLAS	PHYS	UCD	105	310 - General Office
3807	CLAS	PHYS	UCD	105	310 - General Office
3809	CLAS	PHYS	UCD	105	310 - General Office
3811	CLAS	PHYS	UCD	105	310 - General Office
3813	CLAS	PHYS	UCD	105	310 - General Office
			<i>Subtotal</i>	<i>1555</i>	
3111	CLAS	PHYS	UCD	196	315 - Office Service
			<i>Subtotal</i>	<i>196</i>	
TOTAL				5030	

Psychology

Overall the Department of Psychology has 12,528 square feet of space on the campus in two buildings; Science Building and North Classroom. In North Classroom, Psychology has 8,615 square feet. The chart below lists the existing Psychology space that lies within the area of the North Classroom Building Renovation Project. The total is 5,649 square feet, and includes office, conference and research laboratories.

North Classroom Renovation Existing Space Summary CLAS Renovation-Psychology					
Room Number	College	Department	% Ownership	Square Footage (ASF)	Space Type
5005A	CLAS	PSY	100	111	250 - Research Laboratory
5005B	CLAS	PSY	100	111	250 - Research Laboratory
5005C	CLAS	PSY	100	106	250 - Research Laboratory
5005D	CLAS	PSY	100	106	250 - Research Laboratory
5005E	CLAS	PSY	100	106	250 - Research Laboratory
5007	CLAS	PSY	100	562	250 - Research Laboratory
5008A	CLAS	PSY	100	136	250 - Research Laboratory
5008B	CLAS	PSY	100	135	250 - Research Laboratory
5008K	CLAS	PSY	100	85	250 - Research Laboratory
5010A	CLAS	PSY	100	155	250 - Research Laboratory
5010B	CLAS	PSY	100	105	250 - Research Laboratory
			<i>Subtotal</i>	1718	
5007A	CLAS	PSY	100	88	255 - Research Laboratory Service
5010C	CLAS	PSY	100	105	255 - Research Laboratory Service
			<i>Subtotal</i>	193	
5002	CLAS	PSY	100	536	310 - General Office
5002A	CLAS	PSY	100	74	310 - General Office
5002B	CLAS	PSY	100	74	310 - General Office
5002D	CLAS	PSY	100	125	310 - General Office
5002E	CLAS	PSY	100	122	310 - General Office
5002F	CLAS	PSY	100	130	310 - General Office
5002G	CLAS	PSY	100	87	310 - General Office
5002H	CLAS	PSY	100	178	310 - General Office
5002J	CLAS	PSY	100	138	310 - General Office
5002K	CLAS	PSY	100	138	310 - General Office
5002L	CLAS	PSY	100	143	310 - General Office
5002M	CLAS	PSY	100	122	310 - General Office
5006	CLAS	PSY	100	118	310 - General Office
5008C	CLAS	PSY	100	105	310 - General Office
5008D	CLAS	PSY	100	105	310 - General Office
5008E	CLAS	PSY	100	105	310 - General Office
5008F	CLAS	PSY	100	122	310 - General Office
5008G	CLAS	PSY	100	130	310 - General Office
5008H	CLAS	PSY	100	122	310 - General Office
5008J	CLAS	PSY	100	52	310 - General Office
			<i>Subtotal</i>	2726	
5002C	CLAS	PSY	100	204	315 - Office Service
5005	CLAS	PSY	100	150	315 - Office Service
5005F	CLAS	PSY	100	54	315 - Office Service
5008	CLAS	PSY	100	262	315 - Office Service
5010	CLAS	PSY	100	75	315 - Office Service
			<i>Subtotal</i>	745	
5004	CLAS	PSY	100	267	350 - Conference Room
			<i>Subtotal</i>	267	
			TOTAL	5649	

iii. Program Needs and Trends

One of the primary drivers of the North Classroom Building Renovation is the general deterioration of the building due to a lack of significant renovation over the last 26 years. However, the project also affords CU Denver the opportunity to react to university-wide and departmental needs and trends. These needs and trends are discussed on the following pages.

Growth

The two charts below demonstrate a pattern of growth over the last five years for the departments that are part of the North Classroom Building Renovation. The GES Department shows growth in Credit Hours of 22% from FY 08-09 to FY12-13, and although enrollment numbers declined in Environmental Sciences, credit hours taught

in that area rose 15% during the five year period. Physics grew in both enrollment and credit hours over the same period, and Psychology posted very strong growth numbers in both categories.

New Programs

The Department of Geography and Environmental Sciences has introduced a proposal for a new Master of Arts (M.A.) degree in Geography and Applied Geo-Spatial Science. The degree program has yet to be approved by the University of Colorado Board of Regents, so an official program launch date has not been identified. However, it is likely to occur within the next several years. Space for this new program is to be provided predominantly out of the Academic Building 1 (AB1) backfill project, but the North Classroom Building Renovation will give GES the opportunity to support the new program as well as the department overall.

North Classroom Renovation GES, Physics and Psychology Growth- Student Credit Hours Taught by Discipline						
Course Subject	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	% Change
Geology/Geography/Env Sci Total	23,742	28,881	17,475	30,999	29,004	22%
Physics	25,803	26,667	15,867	27,270	26,637	3%
Psychology	52,254	57,249	32,373	59,793	59,934	15%

North Classroom Renovation GES, Physics and Psychology Growth- Enrollment by Major						
Major	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012	% Change
Environmental Sciences	51	56	52	48	36	-29%
Geography	110	155	162	173	151	37%
Physics	42	62	69	81	72	71%
Psychology	704	755	764	774	788	12%
Clinical Health Psychology	5	9	15	19	23	360%

Classroom Size and Pedagogy

One trend in higher education teaching spaces that is evident in CU Denver's new Academic Building 1 (AB1) is a desire for flexible and interactive classrooms over classrooms designed to maximize student stations. The new classrooms in Academic Building 1 allow for student collaboration by providing one or more of the following:

- Moveable tables and chairs that allow for a number of classroom configurations.
- Swiveling seats that allow students in one row to turn around and interact with the row behind them.
- Two rows of seating per tier and larger work surfaces so that students on one tier may collaborate with one another.

What makes these features possible, to a large degree, is using a more relaxed assignable square feet per station (ASF/Station) standard than what would have been used in the era when the North Classroom was designed. The ASF/Station numbers for the AB1 Classrooms are shown in the chart at right. These numbers are indicative of national trends in classroom design.

By comparison, the chart at lower right shows the existing ASF/Station numbers for the classrooms that are priority scheduled to CU Denver that lie within the renovation area.

The chart is ordered from largest classroom capacity to smallest classroom capacity. The average is 14 ASF/Station, with 87% of the classroom falling at or below 15 ASF/Station. What is most striking is the ASF/Station in the smallest classrooms. Typically, ASF/Station numbers increase as classroom size decreases. In this case, none of the classrooms that are smaller than 47 seats have an ASF/Station that is higher than 14. By comparison, the newly designed 40 seat classroom in Academic Building 1 has an ASF/Station of 22.

Academic Building 1 ASF/Station			
Classroom Type	ASF	Stations	ASF/Station
Auditorium	4711	277	17
Lecture Halls	3775	172	22
Learning Lab	3880	150	26
Classroom	890	40	22
Seminar	445	20	22

North Classroom Renovation General Assignment Classrooms Existing ASF/Station			
Room Number	ASF	Stations	ASF/Station
1130	3,804	285	13
1539	2,265	168	13
1535	1,851	120	15
1207	1,132	95	12
1202	1,060	72	15
1204	991	72	14
1607	914	72	13
1806	938	67	14
1408	834	55	15
1511	728	55	13
1515	689	55	13
1315	680	48	14
1402	900	48	19
1602	942	48	20
1603	881	48	18
1605	886	48	18
3004	676	48	14
1325	673	47	14
2001	618	47	13
2002	616	47	13
1326	488	42	12
1313	535	40	13
1314	494	40	12
1321	533	40	13
1323	535	40	13
1324	494	36	14
1322	445	35	13
1311	504	35	14
1312	450	35	13
1316	488	35	14
1533	421	35	12
Average			14

Informal Learning Opportunities

Another trend in academic buildings is to maximize opportunities for informal group gatherings outside of the classroom setting. These types of spaces are highly utilized on the Auraria Campus, where students typically do not live on or near the campus and need somewhere to go before, between and after classes.

These informal spaces can be in the form of private group study rooms or less structured open areas. The current setup of the North Classroom building atrium does not provide for either. This is due to the layout of the atrium, where there is no separation between the main path of travel and the sitting areas. It is also a product of the furnishings that are present in the atrium. The prevailing

furnishing is a rectangular, carpeted block, and there are very few tables present for setting out study materials. It should also be noted that services such as power and data that make student gathering spaces successful are lacking in the atrium.



The existing atrium space includes outdated seating and no access to power.



Green carpet block seating does not provide any work area.



Existing atrium does not provide quiet small group study areas.



Existing seating does not provide adequate student work space.

c. Relation to Academic or Institutional Strategic Plans

In 2007, the University of Colorado Denver began a strategic planning process with three primary intents:

1. To guide and to drive the University of Colorado Denver's strategic future
2. To respond to a request from the University of Colorado Board of Regents for a strategic plan from each of its three campuses
3. To serve as the foundation for the University of Colorado Denver's renewal of accreditation in 2010-11 by the Higher Learning Commission of the North Central Association of Colleges and Schools (NCA).

The process began with the appointing of a permanent group, the University Planning and Accreditation Committee (UPAC) which consisted of senior university officers and elected leadership of the faculty, staff, and students. The convening of the UPAC was followed by the appointment of seven task forces involving more than 200 faculty, staff, and students. Each task force focused on one of the following areas:

- Mission, Vision, and Values
- Learning
- Discovery, Creativity, and Innovation
- Health Care
- Engagement
- Institutional Image and University Communications
- Resource Needs, Infrastructure, and Development

Strategic Plan 2008-2020 was formed using concepts developed by the task forces. That plan was approved by the Board of Regents in January 2008 and again in March 2008.

The specific academic goals and objectives that are supported and advanced by the North Classroom Building Renovation project are listed below. The goal and objective numbers are taken directly from the strategic plan document.

Goal 2.1 Deliver superior educational programs on multiple campuses and academic centers across the state, nation, and around the world.

Objective 2.1.1 Build and sustain superior education facilities and infrastructure.

The North Classroom Building Renovation project advances this objective by improving the function of the classrooms in the North Classroom Building, and by improving some of the space currently allocated to Geology/Geography/Environmental Sciences, Physics and Psychology.

Objective 2.4.1 Increase the undergraduate student population to between 14,000 and 16,000 undergraduate students by 2020.

Providing growth space for Physics advances this objective. In addition, the renovation of the North Classroom atrium will accommodate the increasing needs and wishes of traditional undergraduate students including group study areas, power for charging portable electronics, and areas for heating up food. CU Denver can be more competitive for enrollment by providing quality space for its students.

Goal 7.2 Invest in providing the infrastructure (services and facilities) necessary for a world-class learning and discovery environment for the benefit of our students, faculty, staff, and communities.

Objective 7.2.2 Implement the University of Colorado Denver facilities capital plan to provide cost-effective, adaptable, maintainable, sustainable, and accessible facilities.

The university maintains a ten year capital list that is well vetted with campus leadership. This project is included on that list. One of the major goals of the classroom renovation portion of this project is to increase pedagogical flexibility through technology, furnishings and other elements.

III. Project Description

a. North Classroom Building

i. General Information

The North Classroom building opened in 1987, and was designed and built to replace the Tramway Building at 14th and Arapahoe Street as the main base of operations for the University of Colorado Denver. The Tramway Building was known then as East Classroom.

The North Classroom building was designed by Hoover Berg Desmond, most notably by chief designer and renowned Denver architect George Hoover. The cost of the project was \$28 million.

The juncture of the Speer Boulevard façade and the Larimer Street façade, which includes the buildings signature glass block and a large clock face, has long served as a beacon for those shopping, working and playing downtown as well as the many cars that pass by on Speer Boulevard.

The building totals 257,500 gross square feet, and rises to its maximum height of five stories along the Speer Boulevard elevation.

North Classroom is the third largest building on the Auraria Campus, behind only the Tivoli Student Union (291,635 sf) and the Auraria Science Building (285,821 GSF).

ii. Existing Condition

Building Condition

The University of Colorado Denver submitted a Capital Renewal request to the Office of the State Architect for FY 2014-15 for North Classroom. The submittal, which is included as Appendix C, is the most accurate record of the condition of the facility. The information contained in the request is derived from multiple meetings between CU Denver facilities operations staff and their counterparts at the Auraria Higher Education Center (AHEC), as well as tours of the building so that some of the issues noted by AHEC could be observed first hand by CU Denver staff.

The last FCI audit was conducted in 2007, and the building condition has changed considerably since that time. That report is no longer deemed to be accurate and is not included in the program plan.



The North Classroom building, Speer and Larimer facade.

The items mentioned in the Capital Renewal Request that were considered to be of greatest concern are the roof which is 25 years old and failing, the electrical system, the HVAC system and the building envelope—specifically the failure of many windows seals.

Also listed but considered to be less critical are the poor and inefficient lighting that currently exists in the building and restroom fixtures and partitions which are old and worn.

Classroom Condition

A walking survey of the classrooms in North Classroom revealed that the general appearance of these spaces is poor. Most notable are the poor condition of the furnishings, particularly the fixed seating in the larger classrooms. Other items that were found to be in poor shape are the flooring (particularly the carpet in the rooms that contain carpet) and the ceiling tiles. The lighting is also very old and provides poor illumination.

Classroom Technology

The walkthrough of the building revealed very dated technology that falls well short of the University's existing classroom standards. Some examples include:

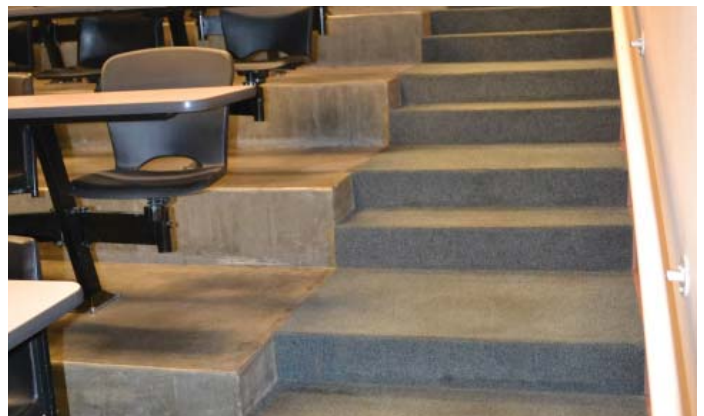
- No power and data to any of the stations in any of the classrooms.
- Pull down projection screens in all but one of the classrooms included in the renovation.
- Dated equipment such as Video Cassette Recorders (VCR).
- Old projectors with poor resolution capabilities.
- No lecture capture, distance learning, or videoconferencing capabilities in any of the rooms.
- Audio systems that vary widely between rooms.
- Lack of an integrated control system at the podium or teaching area in all of the classrooms.

Classroom Layout

In addition to the cramped and rigid classroom conditions described in *Section II.b.iii. Program Needs and Trends*, the following shortcomings were observed in some of the classrooms in the project area:



Existing classroom. Seat covers hide frayed seating.



Existing classroom in North Classroom with old carpet.



Entrance located next to teaching wall disrupts lecture.

- Rooms 1511, 1515, 1521 and 1525 are very long, and the current position of the teaching wall makes the sight lines from the far sides of the room very poor.
- In a number of classrooms, students enter the room on the teaching wall side, which can be disruptive to the class when students enter late and leave early.

Classroom ADA Accommodations

ADA shortcomings in the project area will be explored in much greater detail during the design phase of the project, but the following issues were observed during the walkthrough:

- The number of wheelchair accessible seats in the fixed seating classrooms falls short of the number required by the 2009 International Building Code.
- The fixed seating classrooms lack the required companion seat for each wheelchair accessible seat. The current wheelchair accessible seats are isolated and located in very public areas in the front of the classroom.



Existing classroom with out-of-date technology.

Departmental Space Condition- Geography and Environmental Sciences, Physics, Psychology

The following conditions are commonly observed in North Classroom. Spaces such as these have not been renovated since the building opened in 1987:

- Carpet that is very aged and in some cases worn through or ripped.
- Paint that is very faded and marked up.
- Very old furnishings.
- Offices that were designed to be much smaller than the current 120 assignable square foot university standard. Offices that are 100 assignable square feet or less are common in North Classroom.
- Dated signage that is inaccurate.
- Departmental teaching labs, research labs and seminar rooms that feature all of the shortcomings listed above- poor and dated furnishings, old carpet, and faded paint.



Poor ADA accessibility.



Room 1806. Very high seat density (14 asf/station)

iii. Occupancy

An existing space inventory by institution in the North Classroom is shown at right. CU Denver is the largest occupant. The space occupied by Metropolitan State University of Denver (MSUD) belongs to their Physics Department, which is currently a shared program with the Physics Department from CU Denver. The space occupied by the Auraria Higher Education Center is predominantly support space for custodial, equipment storage and similar uses but also includes the ground floor food service areas. Community College of Denver has no space in North Classroom.

General Assignment Classrooms are identified separately in the campus space tracking system. These are classrooms that are priority assigned to one institution, giving that institution the first right to schedule the room. Any time slots that remain in that room after the priority institution has completed their scheduling are returned to the campus pool for use by the other institutions. As the chart at right indicates, only MSUD and CU Denver have priority assigned classrooms in the North Classroom, and 37 of the 42 general assignment classrooms are priority assigned to CU Denver.

CU Denver assigned space in the North Classroom is further broken down in the chart at lower right - *University of Colorado Denver Space by Division*. This chart represents the occupancy in North Classroom prior to the completion of the Academic Building 1 project. The groups shown in italicized, gray text will be moving into Academic Building 1 in 2014 and their space will be used to create new classrooms and provide growth opportunities to the College of Liberal Arts and Sciences and the College of Engineering and Applied Science.

North Classroom
Existing Space Inventory by Institution- SF

University of Colorado Denver	114,192
Metropolitan State University of Denver	4,136
Community College of Denver	-
Auraria Higher Education Center	7,960
General Assignment Classroom	39,981
Circulation	71,650
TOTAL	237,919

North Classroom
General Assignment Classrooms
Priority Scheduled by Institution

	SF	#
University of Colorado Denver	35,283	37
Metropolitan State University of Denver	4,698	5
TOTAL	39,981	42

North Classroom
University of Colorado Denver Space by Division- SF

College of Liberal Arts and Sciences	45,378
College of Engineering and Applied Science	40,841
<i>Student Financial Services</i>	<i>10,672</i>
<i>Student Affairs</i>	<i>10,062</i>
Information Technology Services	4,289
<i>Diversity</i>	<i>2,091</i>
College of Arts and Media	421
Regulatory Compliance	242
Provost's Office	106
Chancellor's Office	90
TOTAL	114,192

iv. Context Within University Neighborhood

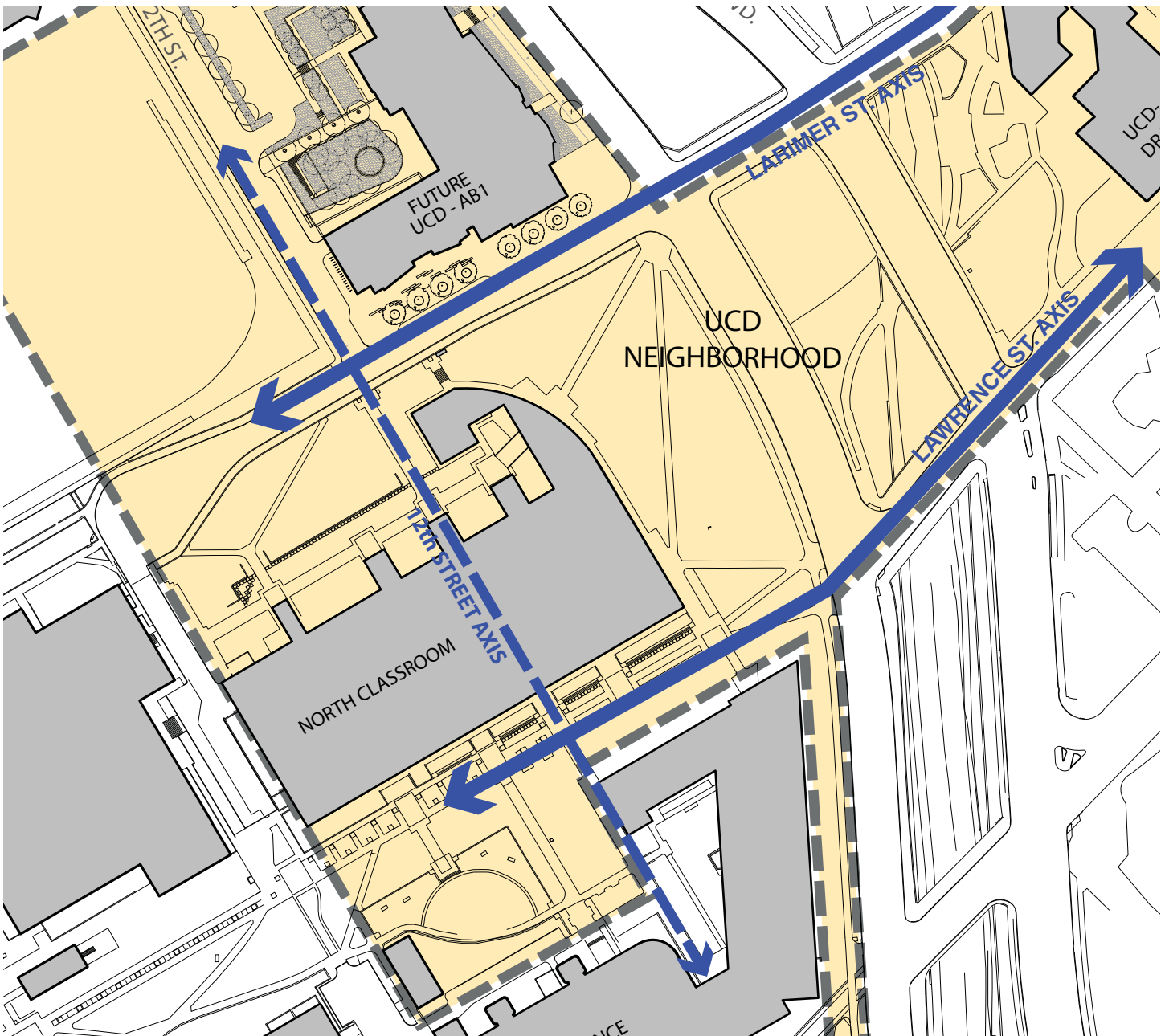
The area map below shows the location of the North Classroom within the Auraria Campus and the University of Colorado Denver neighborhood (the history of the institutional neighborhood concept is discussed more in *Section III.f. Relation to Master Plan and Other Projects*).

The North Classroom lies in the heart of the CU Denver neighborhood, and all three major axes of the neighborhood (Larimer Street, Lawrence Street, 12th Street) either pass through the building or lie along one of the building edges. As the CU Denver neighborhood

develops these axes will strengthen, and traffic through and along North Classroom will increase. The size and total classroom capacity of North Classroom also suggests that a sizeable population of students, faculty and staff will continue to occupy and use that building. It is clear that the future of the CU Denver neighborhood and the future of the North Classroom are very closely linked.

v. Building Ownership and Management

The North Classroom is currently owned and operated by the Auraria Higher Education Center (AHEC).



The University of Colorado Denver, like its Auraria partner institutions Community College of Denver and Metropolitan State University of Denver, allocates funding to the Auraria Higher Education Center to operate this and other AHEC-owned buildings on the campus.

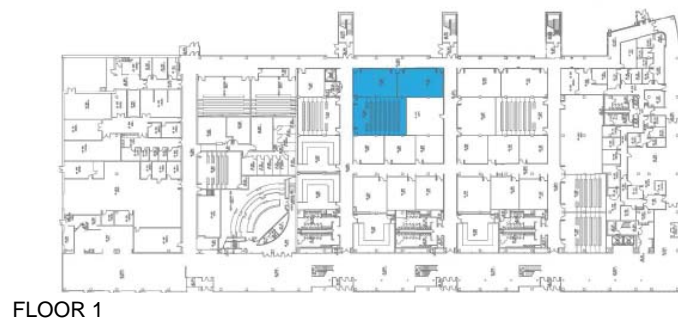
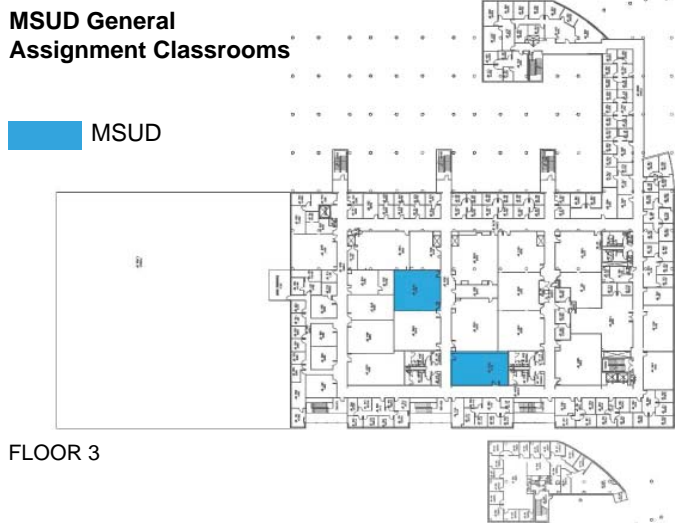
There is a long history on the Auraria Campus of institutions making capital investments in AHEC-owned buildings that benefit the staff, faculty and students that use the building. In fact, a number of these projects have taken place in the North Classroom in areas that are not within the scope of this project.

b. Project Assumptions

The scope described in this program plan assumes the following will take place by the time funding is committed for this project.

CU Denver will trade Metropolitan State University of Denver for their classrooms in North Classroom.

Some of the classrooms shown in the renovation area are currently assigned to MSUD for priority scheduling. The assumption is made that CU Denver will successfully



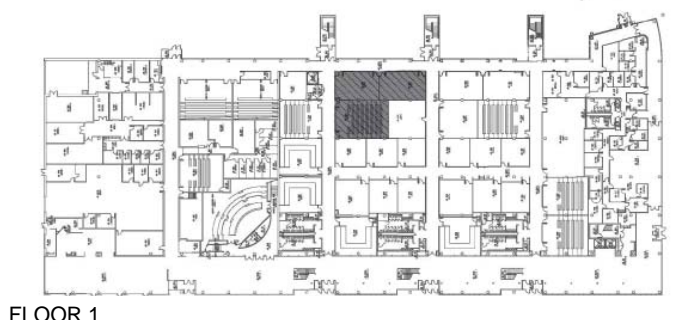
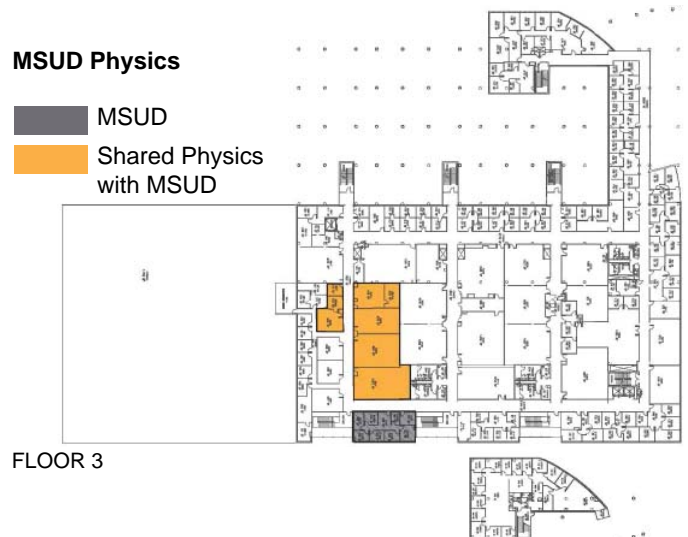
trade space elsewhere on the campus to MSUD for the right to take over priority scheduling of these rooms. The rooms currently assigned to MSUD that fall within the project area are shown at right.

The Physics programs of MSUD and CU Denver will split apart AND CU Denver is able to trade MSUD for both the shared spaces and the dedicated MSUD Physics spaces.

CU Denver Physics and MSUD Physics currently operate a joint physics program. MSUD is in the planning phase to construct a new Aerospace building, which includes space for the MSUD Physics Department.

There are a number of spaces that lie in the project area that are either dedicated MSUD Physics space or are shared between the physics departments. The program plan assumes that CU Denver would be able to trade space elsewhere on campus to MSUD for full ownership of the shared spaces and the dedicated MSUD space. These spaces are shown below.

That the university receives some matching student funding for the atrium renovation.



CU Denver students have expressed some interest in assisting with the funding of the atrium portion of this project. The budget that has been prepared for this program plan assumes a \$500,000 commitment from the students for this purpose. Any adjustment of the student commitment either up or down will affect the project cost or the scope, or both.

That the 1000 corridor will be renovated as part of the Academic Building 1 backfill project.

The atrium area to be renovated in the North Classroom Building Renovation Project extends only to the edge of the 1000 corridor on the first floor. The 1000 corridor is shown in the Academic Building 1 project program plan as being within the scope of the backfill portion of that project.

c. Space Program and Project Diagrams

The chart below summarizes the areas to be renovated in this project. The two areas that increase in square footage from the existing square footage number are CLAS Physics (due to absorbing the MSUD Physics space) and the general assignment classroom space (due to assuming control of the MSUD priority scheduled rooms). Appendix B contains a more detailed breakdown of the classroom space program and the CLAS renovations by department.

Design elements for each of the three areas of the renovation are described below.

University of Colorado Denver North Classroom Renovation Space Program

Room Number	Space name	ASF/Station	Stations/Room	Room Size	Quantity	Area
Geography and Environmental Sciences						2143
U.G.1.0	Office Space					1292
U.G.4.0	Research Lab					851
Physics						8931
U.C.1.0	Office Space					2532
U.C.3.0	Teaching Laboratories					4027
U.C.4.0	Research Lab					2372
Psychology						5649
U.P.1.0	Office Space					3738
U.P.4.0	Research Lab					1911
General Assignment Classrooms						31082
Atrium						14656
TOTAL						62461

i. Atrium

The graphic below illustrates the conceptual principles of the atrium renovation. The vision is to delineate the atrium into three areas based on patterns of circulation and desired functionality.

Public Spaces

The public spaces of the atrium occur around the stairwells and where the north-south corridors bisect the atrium. The concept acknowledges that these areas serve a functional purpose and must continue to do so. Improvements in these areas will be largely limited to aesthetic items such as paint, signage and carpet where

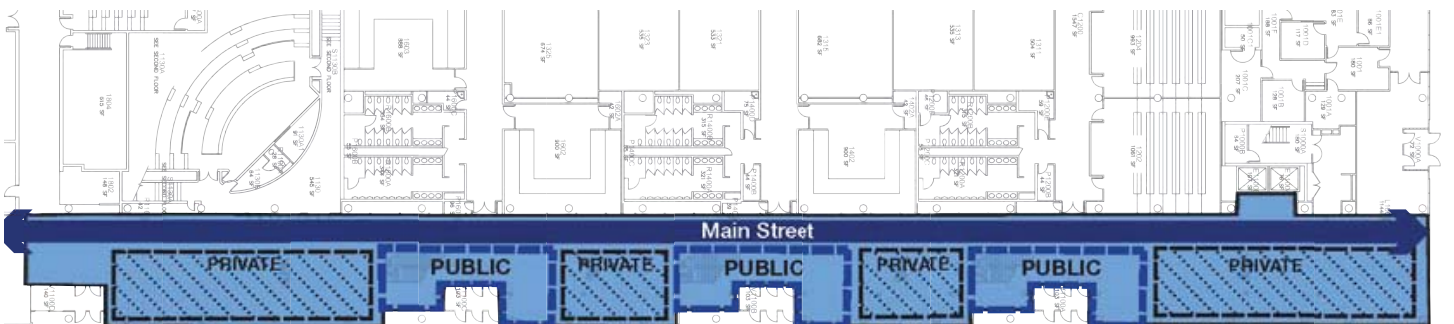
applicable. However, there may be opportunities in these areas to explore standing height seating, power and data connections, and food preparation areas. The second floor of the atrium is a public space.

Private Spaces

The private spaces of the atrium are opportunities for social gathering and informal group study. The areas exist today, but are poorly defined, lack privacy, and are not furnished in a way that encourages group interaction. The design should explore new furnishings and the potential for partitions or other dividers to create privacy. Aesthetic improvements will also be made to these areas.



FLOOR 2 - Atrium Space



FLOOR 1 - Atrium Space

Main Street

The public corridor within the atrium, defined here as “Main Street” serves an important function in North Classroom. It allows the many faculty, staff and students that visit the building to move freely. The main street should continue to serve this function, but the design should explore ways to bring outside elements onto main street that make the experience fun and unique. This could include special light fixtures or banners. These elements should communicate both the functional aspect of the main street and highlight opportunities to exit main street for other pathways or areas that are less noisy and more private.



Carpet pattern delineates public from private spaces.



Second floor North Classroom atrium. No seating.



Modern, bright atrium space, Anschutz Medical Campus.








Movable seating and tables provide several options for student work.

ii. General Assignment Classrooms

The graphics below and at right show the existing characteristics of the classrooms that are part of the renovation project. This includes their layouts, type of tiering, location of teaching wall, and areas where natural light has already been introduced into the classrooms. The following series of graphics illustrate opportunities to improve the classrooms in a variety of ways. Some of the proposed improvements are **fixed**, meaning they are suggested for all of the classrooms regardless of their existing characteristics. Some of them are **variable**, meaning they may only work for certain rooms or they require further study before implementation to ascertain their effects on pedagogy, classroom capacity, or both.

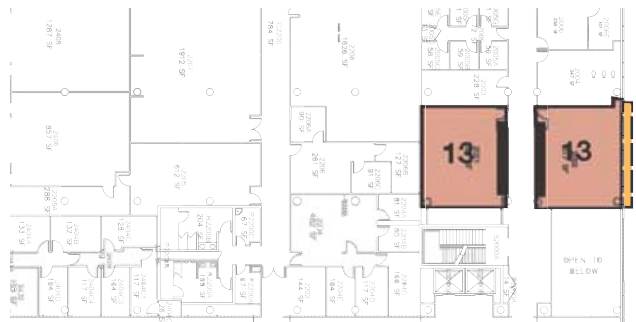
**General Assignment Classrooms
Existing Conditions**

Legend

-  Concrete Tiering - Permanent
-  Wood Tiering - Removable
-  Flat-Floored
-  Existing Natural Light
-  Existing Teaching Wall
- 13** Existing ASF/Station



FLOOR 3



FLOOR 2



FLOOR 1

Fixed Renovation

The fixed elements of the classroom renovation include ADA improvements, technology upgrades, furnishing upgrades, lighting improvements and aesthetic upgrades such as paint and flooring. The ADA improvements will be further developed during design. A full list of technology improvements suggested by Educational Support Services is included as Appendix C. Some of the recommendations include:

- Updating screen and projectors.
- Installing consistent systems control technology in all of the rooms.
- Installing consistent sound management systems in all of the rooms.
- Targeting specific rooms for additional upgrades that would allow for video conferencing, distance learning and lecture capture.

In addition to the Audio-visual elements, the renovation of the classrooms will seek to introduce power and data to student stations wherever feasible.

There is further discussion in the variable elements section regarding different furniture types and applications, but it is assumed that at minimum each room will receive new furnishings, even if a change in layout or pedagogy is not pursued. Lastly, lighting upgrades will apply to all classrooms, even those discussed in the variable section as candidates for adding natural lighting. This will include new, more efficient fixtures that are brighter and more suitable for a classroom environment.

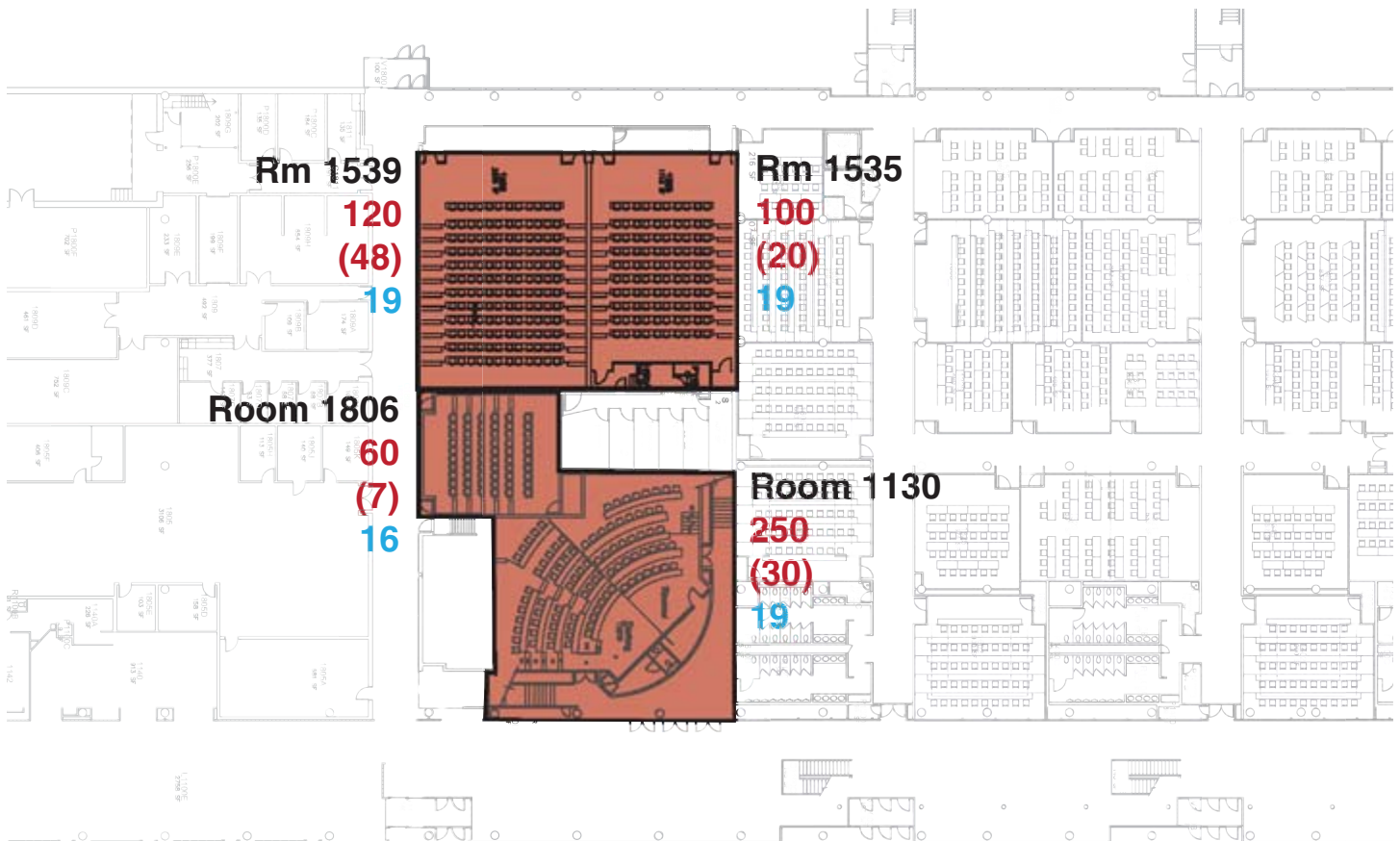
Variable Renovation

The variable renovation recommendations are broken down below by classroom type, with one exception- the natural lighting and teaching wall recommendations. In many cases, the recommendations in this section result in a loss of seats and therefore warrant additional study on how that might affect classroom scheduling.

General Assignment Classrooms
Variable Renovations
Concrete Tiering (Permanent) Rooms

Legend

- New Seats, Reduce Density
- Rm 123 Room Numbers
- 123 Number of Seats
- (123) Loss of Seats
- 12 Modified ASF/Station



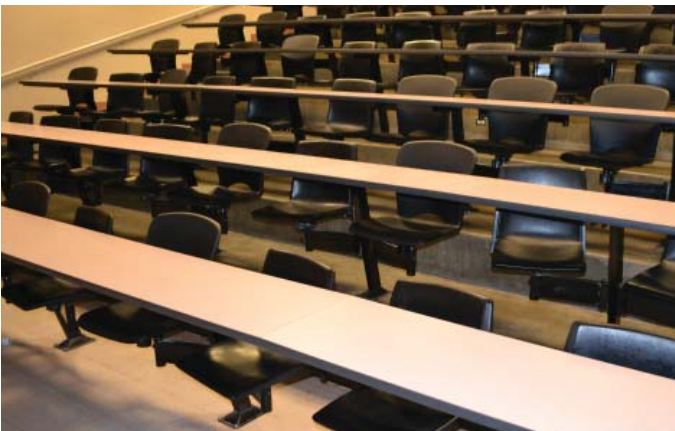
Permanent Tiering

The rooms with concrete tiering (“permanent” tiering for the purposes of this document) are the classrooms with the largest capacity, and the most limited in terms of modification possibilities. Rooms 1130 and 1806 have fixed, individual seats that feature a flip up writing surface (see photo below). Rooms 1539 and 1535 both feature a fixed table with seating that is mounted in pairs and pivot out from a single point (see photo below).

Given the expense of removing concrete tiering, the recommendation for these classrooms is that the tiering remain, and the focus be on replacing existing seating with new. In addition, the possibility of placing fewer seats in the room to provide more work space and improve student comfort should be explored. Some modified seating arrangements that show a reduced seat count for 1806, 1535 and 1539 are shown below. Within each room, the new ASF/Station, new seating capacity, and loss of seats are indicated.



Existing classroom with fixed seating and attached writing surface.



Existing classroom with fixed seating and tables.

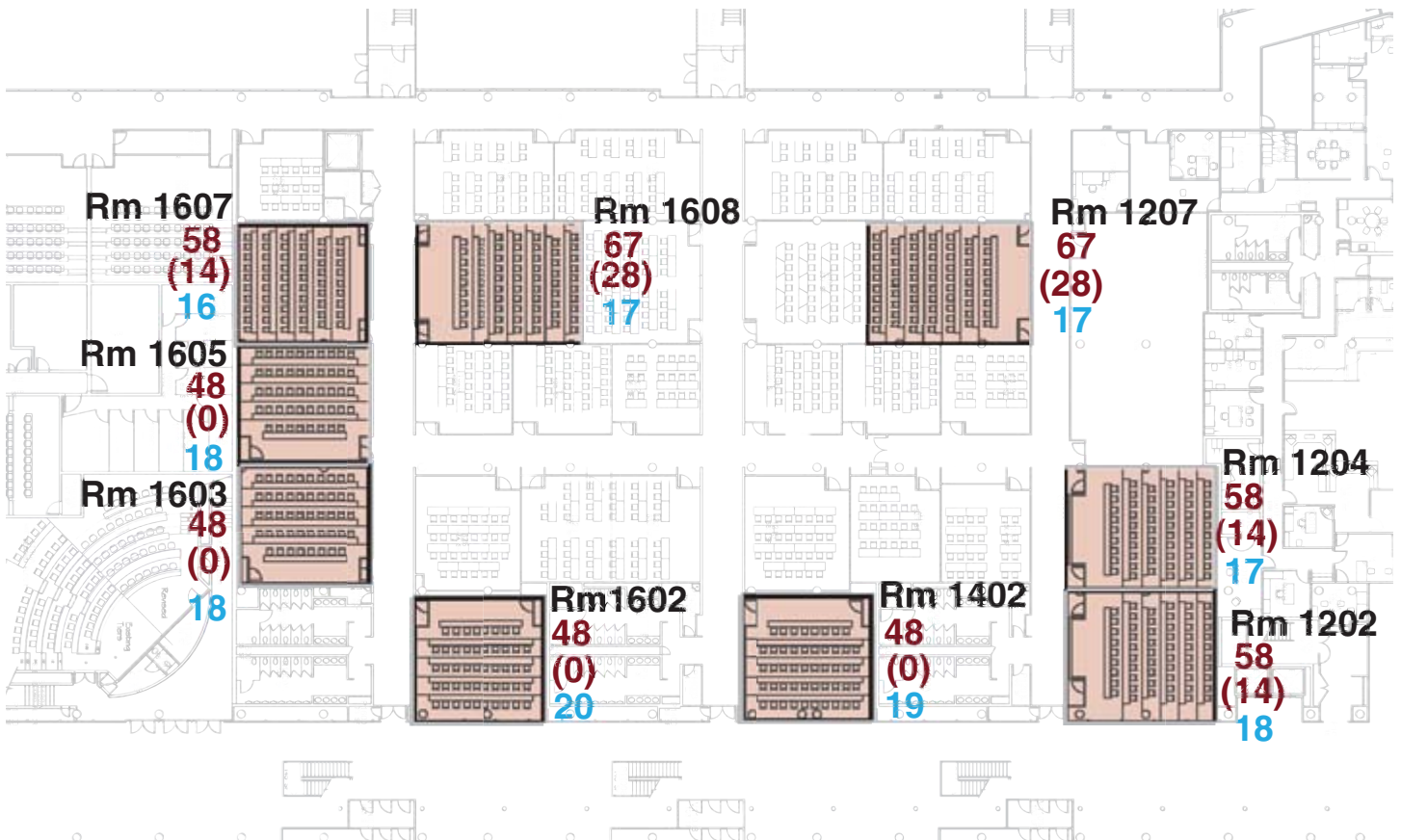
Removable Tiering

The rooms with wood tiering (“removeable tiering” for the purposes of this document) are shown below. These rooms predominantly feature fixed seats with a flip up writing surface. However, there are four horseshoe-shaped rooms (1402, 1602, 1603 and 1605) that feature a fixed table with moveable, sliding chairs (photo on page 29). The modifications suggested for these rooms include removing the existing tiering and installing new tiering that would allow for the integration of power and data to the seats. At the same time, the current furnishing arrangement would be replaced with fixed tables and moveable chairs on casters This arrangement would relax the seating density of the rooms and provide a lot more work surface for students. The modified seating arrangements are illustrated below.

General Assignment Classrooms
Variable Renovations
Wood Tiering (Removeable) Rooms

Legend

- Replace Tiering, Change to Fixed Tables, Moveable Chairs
- Rm 123** Room Numbers
- 123** Number of Seats
- (123)** Loss of Seats
- 12** Modified ASF/Station



FLOOR 1

These modified arrangements would reduce classrooms capacities and the effects of this on classroom scheduling need to be explored further. On the diagram, the new ASF/Station, new seating capacity, and loss of seats are indicated for each room.



Existing fixed seats with writing surface.



Classroom with swivel chairs and two rows of fixed tables per tier. Provides greater interaction opportunities.



Existing horseshoe-shaped classroom with fixed tables and movable seats.



Classroom with movable tables and chairs. Allows greater flexibility.

Flat Floored Rooms

The majority of classrooms included in the North Classroom Building Renovation are flat-floored rooms, and feature moveable chairs with a bolt-on writing surface. It is very efficient model, but the chairs are tightly proportioned, have little work surface and are arranged haphazardly leaving little circulation space (see photo on page 31). The recommendation for these rooms is to change the furnishing arrangement to moveable

General Assignment Classrooms
Variable Renovations
Flat-Floored Rooms

Legend

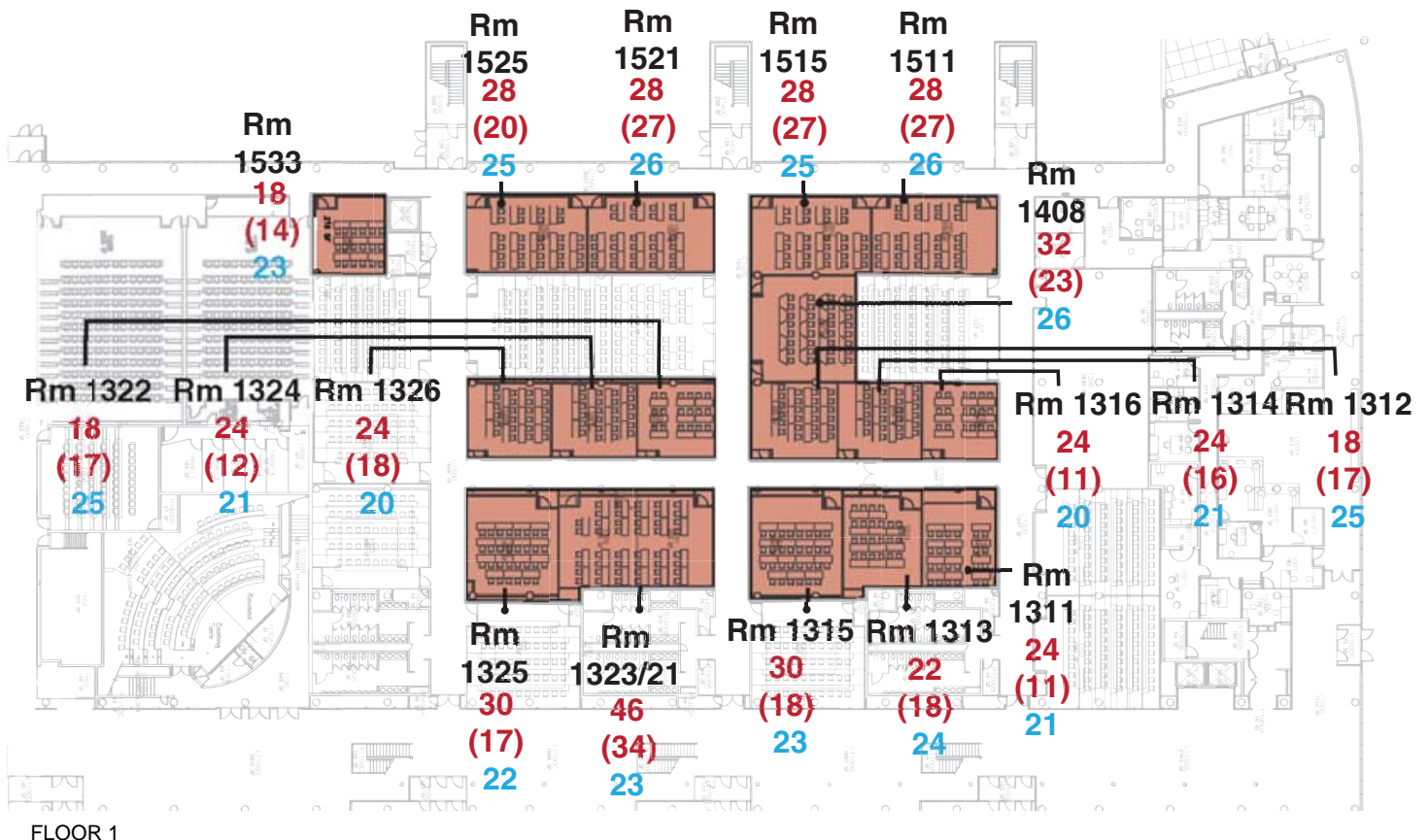
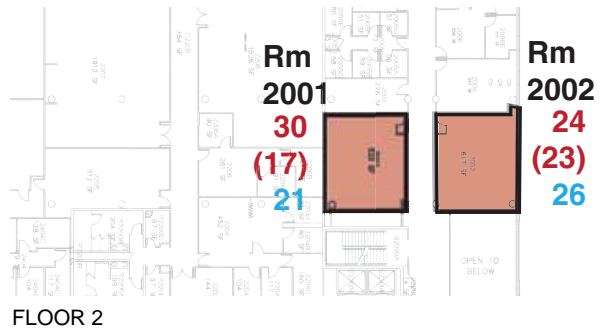
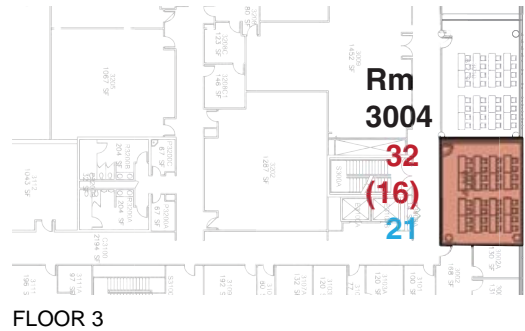
 Moveable Tables, Moveable Chairs

Rm 123 Room Numbers

123 Number of Seats

(123) Loss of Seats

12 Modified ASF/Station



rectangular tables with moveable chairs. At the same time, replacing the VCT flooring with carpet should be explored to reduce noise and allow for the introduction of chairs with casters.

The overall goal is to relax the seat density in these rooms and provide more work surface while still providing the flexibility of the current seating arrangement.

Alternate layouts featuring a moveable table and chairs are shown on the previous page. These new furnishing arrangements result in a loss of seating capacity, in some cases dramatic. This warrants further study. Within each room, the new ASF/Station, new seating capacity, and loss of seats are indicated on the diagram.



Haphazardly arranged seating creates circulation problems.



Existing classroom with moveable chairs/attached desks.

Natural Lighting and Teaching Walls

All of the classrooms were examined in the context of these two variable elements- natural lighting and teaching walls.

Natural Lighting

In this element of the renovation, the goal is to introduce natural lighting into classrooms wherever possible and where it does not already exist. The two pictures below illustrate the difference that natural light can make in the classroom environment. The pictures show two otherwise identical rooms, one with natural light and one without.

The graphic on page 33 shows the rooms that were identified as good candidates for adding natural light. This is based on several factors.

- Natural light would only be added on exterior corridors, where direct natural light could be captured. It was determined that adding clerestory

windows or other mechanisms into interior hallways would add minimal light at best and interfere with projection in those rooms.

- Natural light would only be added where it would not significantly affect projecting onto the teaching wall.

Teaching Wall

The idea of moving the teaching wall in some of the classrooms arose from two concerns:

- Poor sight lines in rooms that have very large side-to-side dimensions (i.e. a very wide teaching wall). See example below left.
- Rooms where it was possible to shift the teaching wall so that students would not enter and exist on the teaching wall side of the classroom.



Existing classroom with natural lighting.



Poor sight lines in a room with large side to side dimensions.






Existing classroom without natural lighting.

The rooms that were deemed to meet at least one of these criteria are shown below. The diagram illustrates both the existing and proposed teaching walls for each of the rooms where a change is being contemplated. The teaching wall recommendations should be reviewed during design for their effect on both the efficacy of each room and the classroom capacity.



General Assignment Classrooms
Variable Renovations
Lighting and Teaching Walls

Legend

-  Existing Teaching Wall
-  Proposed Teaching Wall
-  Proposed Natural Lighting



FLOOR 1

iii. CLAS Renovations

Geography/Environmental Sciences








A space plan for the GES space is shown below. As the graphic shows, the 3619 and 3621 suites will be renovated into faculty research lab space. A portion of that area is already classified as faculty research space. The remaining GES space in the project area (the 3621, 3522, 3524, and 3526 suites, 3528, 3620, and 3622) will remain as office and receive predominantly aesthetic improvements.

Physics

A space plan for Physics is provided below. This includes Physics space currently assigned to CU Denver, as well as space currently shared with MSUD or assigned to MSUD. As the diagram indicates, all Physics space included in the North Classroom Building Renovation will be renovated as it is presently classified (office, teaching lab, research lab) with one exception. The 3123 suite and adjacent room 3121, currently assigned to MSUD, may be re-classified and renovated to function as research lab space. This possibility will be further explored in the design phase of the project.

CLAS Renovations - GES and Physics

Legend

-  GES - Renovate/ Maintain Existing Offices
-  GES - Renovate/ Maintain Existing Lab
-  GES - Renovate and Convert to Research Lab
-  Physics - Renovate/ Maintain Existing Offices
-  Physics - Renovate/ Maintain Existing Research Lab
-  Physics - Renovate and Convert to Research Lab
-  Physics - Renovate/Maintain Existing Class Lab





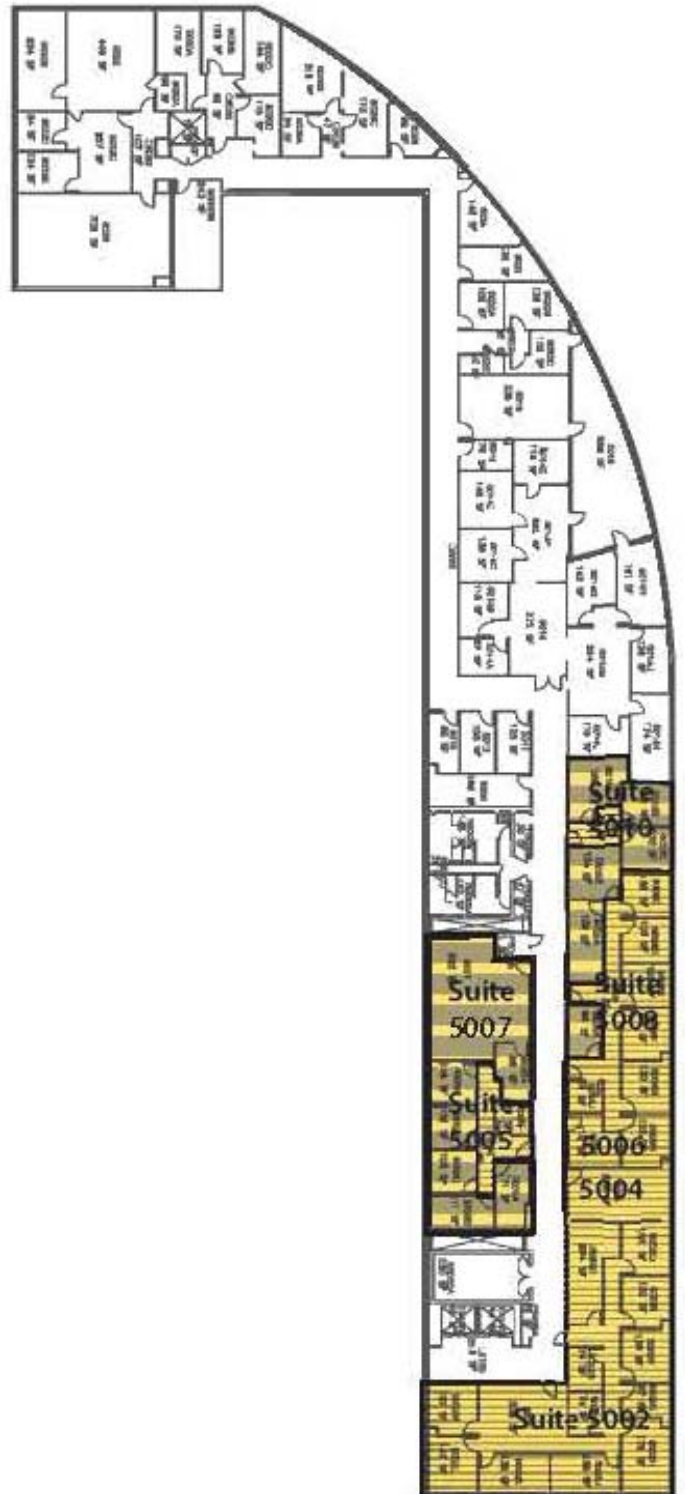
Psychology

A space plan for Psychology is provided at right. All Psychology space that is included in the North Classroom Building Renovation is currently either office space or research lab space. It is expected at this time that all of the rooms will be renovated to continue to function as they do today. This will be explored further in the design phase when the effects of other North Classroom building projects on Psychology are better understood.

CLAS Renovations - Psychology

Legend

-  Psychology - Renovate/
Maintain Existing Offices
-  Psychology - Renovate/
Maintain Existing Research Lab



d. Project Cost Estimate

A project estimate for the North Classroom Building Renovation Project is provided below. The total project estimate is \$10,928,636. The project is entirely cash funded.

CC-C: CAPITAL CONSTRUCTION REQUEST FOR FY 2014-15											
Agency or Institution:		University of Colorado Denver		Signature Department or Institution Approval:		Date					
Project Title:		North Classroom Building Renovation		Signature CCHE Approval:		Date					
Project Year(s):		FY 2014-15		Signature OSPB Approval:		Date					
Agency or Institution Priority Number:		2		Name and e-mail address of preparer: Mark Berthold mark.berthold@ucdenver.edu							
Revision? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Total Project Costs		Total Prior Year Appropriations		Current Request FY 2014-15		Year 2 Request	Year 3 Request	Year 4 Request	Year 5 Request
If yes, last submission date:											
A. Land Acquisition											
(1) Land /Building Acquisition	\$	-	\$	-	\$	-	\$	-	\$	-	\$
B. Professional Services											
(1) Master Plan/PP	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(2) Site Surveys, Investigations, Reports	\$	25,000	\$	-	\$	25,000	\$	-	\$	-	\$
(3) Architectural/Engineering/ Basic Services	\$	1,043,009	\$	-	\$	1,043,009	\$	-	\$	-	\$
(4) Code Review/Inspection	\$	25,000	\$	-	\$	25,000	\$	-	\$	-	\$
(5) Construction Management	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(6) Advertisements	\$	2,000	\$	-	\$	2,000	\$	-	\$	-	\$
(7a) Inflation for Professional Services	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(7b) Inflation Percentage Applied				0.00%		0.00%		0.00%		0.00%	0.00%
(8) Other (LEED Consultant)	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(9) Total Professional Services	\$	1,095,009	\$	-	\$	1,095,009	\$	-	\$	-	\$
C. Construction or Improvement											
(1) Infrastructure	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(a) Service/Utilities	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(b) Site Improvements	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(2) Structure/Systems/ Components	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(a) New (GSF):	\$	-	\$	-	\$	-	\$	-	\$	-	\$
New \$ /GSF											
(b) Renovate 58,250 GSF:	\$	5,668,740	\$	-	\$	5,668,740	\$	-	\$	-	\$
Renovate \$ 97 / GSF											
(3) Other (Security)	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(4) High Performance Certification Program	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(5a) Inflation for Construction	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(5b) Inflation Percentage Applied				0.00%		0.00%		0.00%		0.00%	0.00%
(6) Total Construction Costs	\$	5,668,740	\$	-	\$	5,668,740	\$	-	\$	-	\$
D. Equipment and Furnishings											
(1) Equipment	\$	890,000	\$	-	\$	890,000	\$	-	\$	-	\$
(2) Furnishings	\$	1,346,000	\$	-	\$	1,346,000	\$	-	\$	-	\$
(3) Communications	\$	787,000	\$	-	\$	787,000	\$	-	\$	-	\$
(4a) Inflation on Equipment and Furnishings	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(4b) Inflation Percentage Applied				0.00%		0.00%		0.00%		0.00%	0.00%
(5) Total Equipment and Furnishings Cost	\$	3,023,000	\$	-	\$	3,023,000	\$	-	\$	-	\$
E. Miscellaneous											
(1) Art in Public Places=1% of State Total Construction Costs (see SB 10-94)	\$	35,000	\$	-	\$	35,000	\$	-	\$	-	\$
(2) Annual Payment for Certificates of Participation	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(3) Relocation Costs	\$	113,375	\$	-	\$	113,375	\$	-	\$	-	\$
(4) Other Costs [TAP fees]	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(5) Other Costs [specify]	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(6) Other Costs [specify]	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(7) Other Costs [specify]	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(8) Total Misc. Costs	\$	148,375	\$	-	\$	148,375	\$	-	\$	-	\$
F. Total Project Costs	\$	9,935,124	\$	-	\$	9,935,124	\$	-	\$	-	\$
G. Project Contingency											
(1) 5% for New	\$	-	\$	-	\$	-	\$	-	\$	-	\$
(2) 10% for Renovation	\$	993,512	\$	-	\$	993,512	\$	-	\$	-	\$
(3) Total Contingency	\$	993,512	\$	-	\$	993,512	\$	-	\$	-	\$
H. Total Budget Request [F+G(3)]	\$	10,928,636	\$	-	\$	10,928,636	\$	-	\$	-	\$
I. Source of Funds											
CCF	\$	-	\$	-	\$	-	\$	-	\$	-	\$
CF	\$	10,928,636	\$	-	\$	10,928,636	\$	-	\$	-	\$
RF	\$	-	\$	-	\$	-	\$	-	\$	-	\$
FF	\$	-	\$	-	\$	-	\$	-	\$	-	\$

e. Project Schedule

CLAS and Atrium Renovation

The CLAS and atrium renovations will follow a traditional project schedule, approximately two years from start to finish, once funding is received. This schedule is broken down into the major components below.

With the CLAS renovations, all attempts will be made to leverage the summer semester and winter break to minimize the length of time that faculty and staff would be without the use of their offices, research spaces, and teaching labs. Aligning the project schedule with summers and breaks wherever possible, depending on when funding authorization is received, might lengthen the project schedule.

General Assignment Classroom Renovation

The classroom renovation portion of the project will follow a less traditional route, as the university cannot take too many classrooms offline for renovation at any given time. The plan will be to space the classroom renovations out over a three calendar year period, ensuring that a significant number of classrooms would remain functional during any given semester. The classrooms renovation schedule would also make full use of the winter break and the summer semester to ensure adequate classroom capacity for the fall and spring semesters. With the phased approach, the classroom renovations are expected to take approximately four years from start to finish. The schedule is broken down into phases below.

North Classroom Renovation
Project Schedule

	Design	Bidding/Contracting	Construction	Furniture Install
Atrium Renovation	10 Months	2 Months	10 Months	1 Month
CLAS Renovation	10 Months	2 Months	10 Months	1 Month
Classroom Renovation	10 Months	2 Months	36 Months	1 Months

f. Relation to Master Plan and Other Projects

Relation to Master Plan

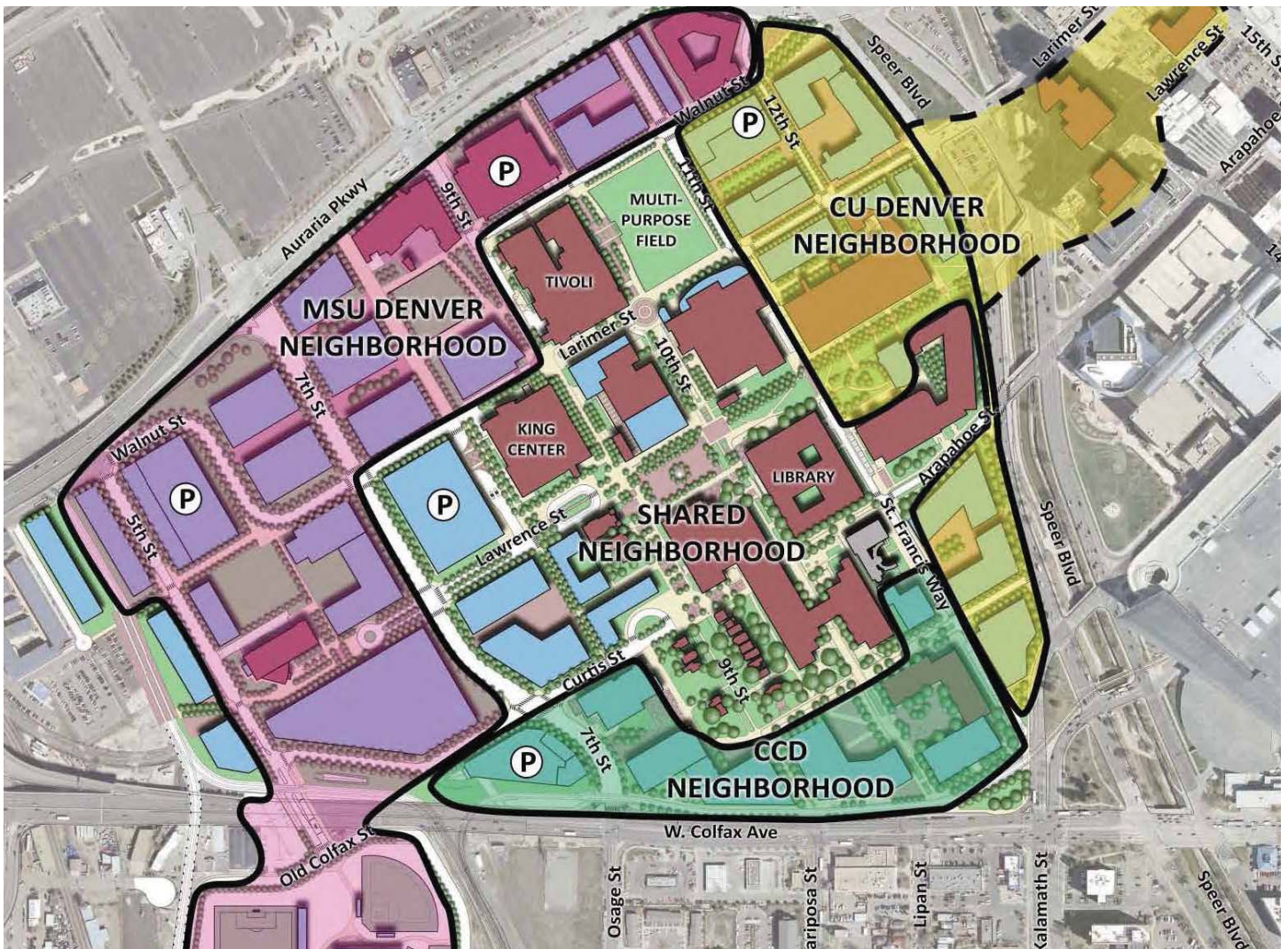
In 2012, the Auraria Higher Education Center (AHEC) updated the master plan for the Auraria Campus in a document titled Auraria Higher Education Center Master Plan Update 2012. At the same time, AHEC hired SmithGroupJJR and Jones Lang LaSalle to do a strategic implementation plan for the campus. This document was titled *From Vision to Reality: Auraria Campus Strategic Implementation Plan*. One of the principle goals of the 2012 master plan update was to formalize some of the changes that had occurred in the boundaries of the institutional neighborhoods. The concept of each Auraria institution being provided a distinct neighborhood had been introduced in the 2007 Auraria master plan, but since that time the neighborhood boundaries had evolved. The graphic below shows the institutional

neighborhoods as shown in the 2012 master plan, and as they remain today. The North Classroom building lies within the boundary of the University of Colorado Denver neighborhood and as such advances the concept of institutionally focused development and renovation within each of the neighborhoods.

The design of the North Classroom Building Renovation project will comply with the Auraria Campus design principles, as listed in Section 5 of the 2012 master plan.

Relation to Other Projects

The North Classroom Building Renovation is one of several projects contemplated for the North Classroom building and immediate surroundings. These projects are in various stages of planning and not all are funded, but their consideration reflects both the importance of the



North Classroom building to the University of Colorado Denver and the lack of funding available for capital investment in the building since it opened in 1987. A narrative description is provided for each project below, and their project scope areas are illustrated graphically at right.

Academic Building 1 Backfill

The Academic Building 1 project includes the construction of a new, 153,000 GSF building at Larimer Street and Speer Boulevard, as well as interior renovations to space being vacated by departments moving into the new building. Some of those interior renovations are occurring in the North Classroom. A total of 29,900 gross square feet will be renovated in North Classroom as part of the Academic Building 1 backfill. The scope includes office renovations for the College of Liberal Arts and Sciences and the College of Engineering and Applied Sciences as well as the creation of new classrooms on the first floor. This project is funded. Programming and design for the backfill will begin in the fall of 2013.

North Classroom Capital Renewal

CU Denver has submitted a capital renewal project for North Classroom for funding in FY 2014-15. The capital renewal process allows a state entity to package a number of controlled maintenance projects within a single building into one, larger request for funding. Given the age of the North Classroom, and the small amount that has been invested in preventative maintenance since the building opened in 1987, the needs are substantial. The items of greatest concern are the roof, building skin, electrical and HVAC systems. In addition to improving the comfort and experience of those who use the building, these projects will greatly improve the efficiency of the building and lower operating costs. The project budget is \$7,846,650. This project has not yet been funded.

Engineering and Physical Sciences Wing

The Engineering and Physical Sciences Wing project has two components: a new, 60,000 gsf building for the College of Engineering and Applied Sciences (CEAS) adjacent to North Classroom and renovations to 39,500 gsf of space being vacated by CEAS in North Classroom. Total project budget is \$35,442,930. CU Denver plans to seek capital construction funding of approximately \$9 million for FY 2016-17 for the project, and would provide cash funding for the remainder.



g. Project Alternatives

Two alternatives exist to the project described herein. One would be to not do the project in any form, and the other would be to modify the scope of the project to account for any funding limitations that arise.

No Project

Not doing the project at all would have the following consequences:

- The atrium would continue to degrade and a prime opportunity to create a welcoming gathering environment for CU Denver students would be lost.
- The classrooms in North Classroom would continue to age, and the gap between these classrooms and the standard of classrooms offered by competing institutions would widen. This would be true in a number of areas including technology, furnishings, layout, and lighting.
- The CLAS spaces would remain as they were 26 years ago when the building opened, including those offices and teaching laboratory spaces absorbed from the MSUD Physics program.

It is expected that this option could result in stagnant or declining enrollment over time, as well as decreased efficiency and productivity.

Modified Scope

The modified scope would fall somewhere between the full project scope and the no project alternative described above. There are a number of variations on this theme, but a simplistic scenario might be that one of the three main elements (Atrium, CLAS Renovations, General Assignment Classroom Renovations) be removed from the project and either funded through a separate mechanism or not pursued at all.

Some scenarios that would trigger consideration of a modified scope are the following:

- If funding is available, but in an amount

less than the projected cost of the project. One example of this would be if CU Denver students are unable to commit the \$500,000 toward the lobby renovation that has been assumed in this program plan.

- If need dictates that certain program elements be completed before full funding can be secured, those program elements might be removed from this project.

IV. Appendices

A. North Classroom Capital Renewal Form

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A. AGENCY BASIC DATA:

<input type="checkbox"/>	Controlled Maintenance Request	<input checked="" type="checkbox"/>	Capital Renewal Building/Infrastructure Request
		<input checked="" type="checkbox"/>	HPCP required in Capital Renewal Request (Y/N) (on CC-A specify HPCP compliance)

1) Agency University of Colorado Denver

2) Department Higher Education

3) Agency ID No. 001-15 Project M # New request

4) Agency Priority # 1

5) Project Title North Classroom Capital Renewal

B. FACILITY PROFILE

1) Facility Type Site (Utilities underground) _____
 or Site (Improvements above ground) _____
 or Building Name (s) North Classroom
 Risk Mgmt. Bldg(s) ID# _____

2) Facility Location Auraria Higher Education Center

3) Facility Area/Age GSF 259,211 ASF 154,668 Date Built 1988

4) Facility Functional Use/Occupancy Classrooms/Academic Offices/Labs/Instructional Space

5) Facility Construction (Type) Cast-in-Place Concrete Frame with exterior brick veneer and metal studs, Building Type II-A with automatic sprinkler system.

6) Facility Physical Condition and Facility Condition Index (FCI) Number
 Actual FCI = 84* AHEC Targeted FCI = 85* AHEC Date of Last Audit 2007

Structurally sound but with basic building systems have deteriorated and are in need of repair/upgrade for code compliance. System upgrades are needed especially the roof but also for air handling systems, electrical systems, exterior window glazing and seals, common areas, restrooms, lighting systems. The 25 year-old building has been well maintained but many systems and finishes have exceeded their useful life. Note the last FCI Audit was completed in 2007, and the building has deteriorated rapidly over the past 6 years due to heavy use and environmental conditions. Based upon recent observations and visual inspection of the building by the campus Architect and the Facilities Projects group, the current FCI is estimated to be substantially lower.

7) Facility - Intensity of Use, Time(s) of Operation: (Hours/Day, Days/Month, Months/Year)
7 a.m. – 10:00 p.m.; 6 days a week, 12 months a year, serving 2,550 students/hr at full capacity.

8) Facility - Current Replacement Value \$ 54,761,228

9) Master Plan Status - Check one or more of the following:

a) Facility 'useful' life is less than five (5) years.

b) Facility 'useful' life is more than five (5) years.

c) Master Plan is obsolete; Last Date Approved (by OSPB/CDHE) _____

d) Major facility changes, renovations, or program revisions are ongoing or anticipated in the next five years, (If yes, please explain below if these facility renovations or program revisions may have an impact on this CM request.) _____

10) Facility Audit Survey:

a) Facility Audit Survey concluded and submitted to SBP - Date _____

b) Status of the Infrastructure Assessment. % Completed _____

c) Facility Audit Survey Cycle n/a (last audit conducted in 2007)

11) List all the controlled maintenance, capital construction, and emergency projects completed within _____

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the last five years or ongoing projects that can be associated with either this CM building or infrastructure request.

Project No.	Project Title	Completion date or status
M06032	Life Safety Mechanical and Electrical Repairs, Ph 1 of 1 (Campus)	Completed 2007
M07045	Campus Elevator Repairs, Ph 1 of 1 (2 passenger elevators)	Completed 2009
	Science Building Backfill (Upgrade of NC Freight Elevator and NC Fire Alarm System)	Completed 2011 and 2012

C. INTEGRATED PROGRAM PLAN DATA

NOTE: For a Capital Renewal Building/Infrastructure Request, refer to the instructions for the additional information required to support the request.

1) Narrative Description of CM Problem (Initial problem and solution by phase):

A) It is anticipated that within the next Fiscal Year that the responsibility of operating and maintaining the North Classroom Building on the Auraria campus will be transferred from the Auraria Higher Education Center (AHEC) to the University of Colorado Denver. The 2007 facility audit for this building demonstrated deficiencies in all major building systems. The deferred maintenance items related to major building systems have reached a critical juncture. These items include the roof, building electrical, the HVAC system and building envelope.

- The roof is 25 years old and failing.
- On a recent walk-thru it was observed that filters in the 25-year old AHUs are clogged with dirt and some filters are missing. The unit serving the 5 story portion cannot maintain static pressure and has difficulty in maintaining temperature in summer and winter. Pneumatic controls are beginning to fail and will require replacing since they can no longer be repaired. Failure of any of the mechanical systems will severely impact the ability to support the classroom functions of this building.
- Interior lighting is poor and highly inefficient. Suspended and hard lid ceilings sagging and separating in several areas of the public corridors.
- Other than the toilet fixtures having been replaced with 1.6 gpm fixtures in 2003 the restrooms have not been updated to since first built. Some partitions are rusting and the epoxy floors are worn.

This capital renewal project will address the operational issues that impact the full use/functionality of this facility. The Capital Renewal Request does not exceed 25% of the value of the building but appropriate strategies will be used as applicable.

B) See breakdown under Item #5 – Detailed Cost Estimate

C) See attached floor and roof plans indicating extent of general interior upgrades to public areas, roof area and location of mechanical penthouses.

D) See attached Facilities Audit performed by AHEC in 2007

E) See attached list of University of Colorado Denver capital construction priorities - FY 2015 Prioritized State Capital Construction Budget Request and FY 2015 - FY 2019 Five-Year Capital Construction Plan submitted to the Board of Regents

F) By using a CM/GC approach for this project we will be able to confirm our cost estimates and effectively manage the design and construction process. A second component of this project is a Cash Funded project scope to address programmatic and functionality of the building for its users. If this Capital Renewal is funded, the Cash Funded construction portion of the project would be done simultaneously with the Capital Renewal to gain economy of scale in the construction and to help

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minimize the amount of disruption time to the building occupants.

2) Total Project Cost Estimate (From Cost Breakdown) \$ **\$7,846,650**

3) Consequences (cost effects, program impacts, facility impacts, etc.) of not funding and justifying this specific project request:

The current and future delivery of academic programs will be severely affected if this project is not funded. This is the most heavily utilized building on the Auraria campus. Many core undergraduate courses are offered in this building. If not funded, the number of maintenance calls will increase, causing additional operating expense. The building systems will deteriorate even further and the student experience in the building will worsen. The number of leaks on the roof will increase, requiring costly patches that are only short term fixes. Due to the increasing deterioration of the HVAC system and the porous building envelope, the operational efficiency of the building will continue to decrease.

4) **Mandatory** - Include Facility Audit documentation from most recent audit. Include site maps for any infrastructure project request.

5) **Optional** - Include photographs and any other supporting documents.

6) Explanation of how this project will improve the building(s) facility condition index or improve a specific infrastructure system.

All recommended work when completed will improve the FCI number for this building. While updating the various building systems will extend the life of this building for use by University of Colorado Denver, one of the additional benefits of this Capital Renewal Project will be the replacement equipment building systems will operate at increased efficiency rates compared to the original building systems that were installed in 1988.

Note: This is a companion project to the cash funded project that will be submitted to the Legislative Capital Development Committee this fall on the Two-year List of Cash Needs. Upon the completion of the university-funded Academic Building 1, this project will renovate spaces vacated by programs relocating to the new building and ease overcrowding in undergraduate programs relocating to from other Auraria buildings. This Capital Renewal project and the Cash Funded project are planned to be constructed together to achieve construction cost savings and minimize disruption in this heavily utilized building.

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D. DETAILED COST ESTIMATE (detail by phase, one page per phase, include all phases)

1) Approved By Todd Akey 2) Phase? Phase 1 of 1
3) Method and Date of Estimate "means" square foot and historical campus project data

4) Professional Services

Site Surveys, Investigations, and Reports:	\$17,000
Arch/Eng/Basic Services:	\$747,800
Code Review/Inspection:	\$15,000
Other (Explain): Advertising	\$2,000
Total of Professional Services:	\$781,800

5) Construction Improvement (by Construction Specification Institute (CSI) Division format)

WORK ITEM (Labor/Material/Equipment)	UNIT <u>sf, cf, lf, etc.</u>	UNIT COST	EXTENDED COST
Infrastructure			
a) Utility Services:			0
b) Site Improvements:			0
Structure/Systems/Components			
Div. 07 - Roof Replacement (97,466 sf)	sf	\$12.54	1,222,000
Div. 07 - Exterior Sealants (4,278 lf based on building perimeter at grade and vertical control joints)	lf	\$3.51	15,000
Div. 08 - Exterior Glazing/Doors based on 20% of existing	lf	\$19.47	400,000
Div. 09 – Finishes (paint , flooring, ceiling replacement/repairs - 60,723 sf of public areas including stairwells, restrooms, corridors – excludes atrium space)	sf	\$33.37	2,040,212
Div. 23 – AHUs, Controls, Repair and Cleaning of Air Distribution System (based on 259,211 gsf)	sf	\$4.44	1,151,442
Div. 26 – Interior Lighting/transformer/panel upgrades (based on 259,211 gsf)	sf	\$2.31	600,000
Div. 27 – Communications (based on 60,723 sf public areas excludes atrium space)	sf	\$0.96	58,000
Other(explain):			
Contractor's General Conditions:	% of Constr	10%	629,080
Contractor's Overhead & Profit:	% of Constr	3%	188,724
Total of Construction Improvement Costs:			\$6,290,795

5a) Total square feet/lineal feet of Construction Improvement area:	259,211 gsf
5b) Overall cost per square foot/lineal foot of construction Improvement:	\$24.27/gsf

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6) Miscellaneous (explain)

Relocation/staging coordination(based on 60,723 sf of public areas)	sf	\$1.00	\$60,723
Total of Miscellaneous Costs:			\$60,723

7) Project Contingency

Contingency (10% CM) (Percentage of total of professional services, construction improvements, and miscellaneous costs.)	\$713,332
--	-----------

8) Total Cost of the Project (single phase) or Total for this specific Phase of all professional services (4), construction improvements(5), miscellaneous costs(6), and project contingency(7)

	\$7,846,650
--	-------------

Note: Agency formatted cost estimates may accompany this page.

E. PROPOSED PHASING

PRIOR PHASING¹

Proj. M#	Fiscal Year	Phase or Phases of Work	Dollar Amount (Actual Appropriation)
	FY 2010/2011		
	FY 2011/2012		
	FY 2012/2013		
	FY 2013/2014		
(Subtotal)			\$

CURRENT PHASE² REQUESTED

Proj. M#	Fiscal Year	Phase of Work	Dollar Amount (Per Detailed Budget)
	FY 2014/2015	Phase 1 of 1	\$7,846,650

FUTURE PHASING²

Proj. M#	Fiscal Year	Phase or Phases of Work	Dollar Amount (Per Detailed Budget)
	FY 2015/2016		
	FY 2016/2017		
	FY 2017/2018		
	FY 2018/2019		
(Subtotal)			\$

TOTAL PROJECT DOLLAR AMOUNT \$ 7,846,650
(All Prior, Future Phases subtotals and Current Dollar amount)

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- ¹ List all previous phases with actual appropriation by year (include federal funding). Note if different from requested amount.
- ² List all current and anticipated future phases with estimated costs as listed in the detailed cost estimate subtotal blank 8.

F. PROPOSED PROJECT IMPLEMENTATION SCHEDULE (PLAN):

PHASE	FROM	TO
1. Pre-Design (Insert Dates)	July 2014	September 2014
2. Design (Insert Dates)	October 2014	March 2015
3. Construction (Insert Dates)	April 2015	April 2016
4. Project Close-out/Final Completion	April 2016	June 2016

- *NOTE: This Capital Renewal project and the Cash Funded project are planned to be constructed together to achieve construction cost savings and minimize disruption in this heavily utilized building.*

B. Space Program by Area

North Classroom Renovation Space Program General Assignment Classrooms				
Room Number	Square Footage	Room Type	Allocation	Capacity
1130	4,842	114 - Classroom: Extra-Large (101 & above Students)	UCD	285
1539	2,265	114 - Classroom: Extra-Large (101 & above Students)	UCD	168
1535	1,851	114 - Classroom: Extra-Large (101 & above Students)	UCD	120
1207	1,132	113 - Classroom: Large (50 - 100 Students)	UCD	95
1608	1,157	113 - Classroom: Large (50 - 100 Students)	MSUD	95
1202	1,060	113 - Classroom: Large (50 - 100 Students)	UCD	72
1204	991	113 - Classroom: Large (50 - 100 Students)	UCD	72
1607	914	113 - Classroom: Large (50 - 100 Students)	UCD	72
1806	938	113 - Classroom: Large (50 - 100 Students)	UCD	67
1408	834	113 - Classroom: Large (50 - 100 Students)	UCD	55
1511	728	113 - Classroom: Large (50 - 100 Students)	UCD	55
1515	689	113 - Classroom: Large (50 - 100 Students)	UCD	55
1521	733	113 - Classroom: Large (50 - 100 Students)	MSUD	55
1525	689	112 - Classroom: Medium (36 - 49 Students)	MSUD	48
1315	680	112 - Classroom: Medium (36 - 49 Students)	UCD	48
1402	900	112 - Classroom: Medium (36 - 49 Students)	UCD	48
1602	942	112 - Classroom: Medium (36 - 49 Students)	UCD	48
1603	881	112 - Classroom: Medium (36 - 49 Students)	UCD	48
1605	886	112 - Classroom: Medium (36 - 49 Students)	UCD	48
3004	676	111 - Classroom: Small (1 - 35 Students)	UCD	48
1325	673	112 - Classroom: Medium (36 - 49 Students)	UCD	47
2001	618	112 - Classroom: Medium (36 - 49 Students)	UCD	47
2002	616	112 - Classroom: Medium (36 - 49 Students)	UCD	47
1326	488	112 - Classroom: Medium (36 - 49 Students)	UCD	42
1313	535	112 - Classroom: Medium (36 - 49 Students)	UCD	40
1314	494	112 - Classroom: Medium (36 - 49 Students)	UCD	40
1321	533	112 - Classroom: Medium (36 - 49 Students)	UCD	40
1323	535	112 - Classroom: Medium (36 - 49 Students)	UCD	40
1324	494	112 - Classroom: Medium (36 - 49 Students)	UCD	36
1322	445	111 - Classroom: Small (1 - 35 Students)	UCD	35
1311	504	112 - Classroom: Medium (36 - 49 Students)	UCD	35
1312	450	112 - Classroom: Medium (36 - 49 Students)	UCD	35
1316	488	111 - Classroom: Small (1 - 35 Students)	UCD	35
1533	421	112 - Classroom: Medium (36 - 49 Students)	UCD	35
TOTAL	31,082			2,156

North Classroom Renovation
Space Program
CLAS Renovation-Psychology

Room Number	College	Department	% Ownership	Square Footage (ASF)	Space Type
5005A	CLAS	PSY	100	111	250 - Research Laboratory
5005B	CLAS	PSY	100	111	250 - Research Laboratory
5005C	CLAS	PSY	100	106	250 - Research Laboratory
5005D	CLAS	PSY	100	106	250 - Research Laboratory
5005E	CLAS	PSY	100	106	250 - Research Laboratory
5007	CLAS	PSY	100	562	250 - Research Laboratory
5008A	CLAS	PSY	100	136	250 - Research Laboratory
5008B	CLAS	PSY	100	135	250 - Research Laboratory
5008K	CLAS	PSY	100	85	250 - Research Laboratory
5010A	CLAS	PSY	100	155	250 - Research Laboratory
5010B	CLAS	PSY	100	105	250 - Research Laboratory
			<i>Subtotal</i>	<i>1718</i>	
5007A	CLAS	PSY	100	88	255 - Research Laboratory Service
5010C	CLAS	PSY	100	105	255 - Research Laboratory Service
			<i>Subtotal</i>	<i>193</i>	
5002	CLAS	PSY	100	536	310 - General Office
5002A	CLAS	PSY	100	74	310 - General Office
5002B	CLAS	PSY	100	74	310 - General Office
5002D	CLAS	PSY	100	125	310 - General Office
5002E	CLAS	PSY	100	122	310 - General Office
5002F	CLAS	PSY	100	130	310 - General Office
5002G	CLAS	PSY	100	87	310 - General Office
5002H	CLAS	PSY	100	178	310 - General Office
5002J	CLAS	PSY	100	138	310 - General Office
5002K	CLAS	PSY	100	138	310 - General Office
5002L	CLAS	PSY	100	143	310 - General Office
5002M	CLAS	PSY	100	122	310 - General Office
5006	CLAS	PSY	100	118	310 - General Office
5008C	CLAS	PSY	100	105	310 - General Office
5008D	CLAS	PSY	100	105	310 - General Office
5008E	CLAS	PSY	100	105	310 - General Office
5008F	CLAS	PSY	100	122	310 - General Office
5008G	CLAS	PSY	100	130	310 - General Office
5008H	CLAS	PSY	100	122	310 - General Office
5008J	CLAS	PSY	100	52	310 - General Office
			<i>Subtotal</i>	<i>2726</i>	
5002C	CLAS	PSY	100	204	315 - Office Service
5005	CLAS	PSY	100	150	315 - Office Service
5005F	CLAS	PSY	100	54	315 - Office Service
5008	CLAS	PSY	100	262	315 - Office Service
5010	CLAS	PSY	100	75	315 - Office Service
			<i>Subtotal</i>	<i>745</i>	
5004	CLAS	PSY	100	267	350 - Conference Room
			<i>Subtotal</i>	<i>267</i>	
			TOTAL	5649	

North Classroom Renovation
Space Program
CLAS Renovation-Physics

Room Number	College	Department	Ownership	Square Footage (ASF)	Space Type
3111F	CLAS	PHYS	UCD	105	210 - Class Lab
3604	CLAS	PHYS	Shared	1058	210 - Class Lab
3609	CLAS	PHYS	Shared	322	210 - Class Lab
3606	CLAS	PHYS	Shared	894	210 - Class Lab
			<i>Subtotal</i>	2379	
3608	CLAS	PHYS	Shared	680	215 - Class Lab Service
3609A	CLAS	PHYS	Shared	114	215 - Class Lab Service
3610	CLAS	PHYS	Shared	418	215 - Class Lab Service
3610A	CLAS	PHYS	Shared	222	215 - Class Lab Service
3115	CLAS	PHYS	UCD	214	220 - Open Laboratory
			<i>Subtotal</i>	1648	
3009	CLAS	CLAS	UCD	984	250 - Research Laboratory
3009A	CLAS	CLAS	UCD	112	250 - Research Laboratory
3009B	CLAS	CLAS	UCD	113	250 - Research Laboratory
3601	CLAS	PHYS	UCD	397	250 - Research Laboratory
3603	CLAS	PHYS	UCD	326	250 - Research Laboratory
3605	CLAS	PHYS	UCD	326	250 - Research Laboratory
3611	CLAS	PHYS	Shared	114	250 - Research Laboratory
			<i>Subtotal</i>	2372	
3111A	CLAS	PHYS	UCD	97	310 - General Office
3111B	CLAS	PHYS	UCD	101	310 - General Office
3111C	CLAS	PHYS	UCD	103	310 - General Office
3111D	CLAS	PHYS	UCD	103	310 - General Office
3111E	CLAS	PHYS	UCD	116	310 - General Office
3121	CLAS	PHYS	MSUD	113	310 - General Office
3123	CLAS	PHYS	MSUD	198	310 - General Office
3123A	CLAS	PHYS	MSUD	64	310 - General Office
3123B	CLAS	PHYS	MSUD	142	310 - General Office
3123C	CLAS	PHYS	MSUD	103	310 - General Office
3123D	CLAS	PHYS	MSUD	103	310 - General Office
3123E	CLAS	PHYS	MSUD	100	310 - General Office
3123F	CLAS	PHYS	MSUD	105	310 - General Office
3123G	CLAS	PHYS	MSUD	103	310 - General Office
3801A	CLAS	PHYS	UCD	152	310 - General Office
3803	CLAS	PHYS	UCD	108	310 - General Office
3805	CLAS	PHYS	UCD	105	310 - General Office
3807	CLAS	PHYS	UCD	105	310 - General Office
3809	CLAS	PHYS	UCD	105	310 - General Office
3811	CLAS	PHYS	UCD	105	310 - General Office
3813	CLAS	PHYS	UCD	105	310 - General Office
			<i>Subtotal</i>	2336	
3111	CLAS	PHYS	UCD	196	315 - Office Service
			<i>Subtotal</i>	196	
TOTAL				8931	

North Classroom Renovation
Space Program
CLAS Renovation-GES

Room Number	College	Department	% Ownership	Square Footage (ASF)	Space Type
3619	CLAS	GES	100	192	250 - Research Laboratory
3621	CLAS	GES	100	214	250 - Research Laboratory
3621A	CLAS	GES	100	228	250 - Research Laboratory
3621B	CLAS	GES	100	138	250 - Research Laboratory
			<i>Subtotal</i>	772	
3619A	CLAS	GES	100	79	255 - Research Laboratory Service
			<i>Subtotal</i>	79	
3421	CLAS	GES	100	103	310 - General Office
3421A	CLAS	GES	100	113	310 - General Office
3522	CLAS	GES	100	113	310 - General Office
3524	CLAS	GES	100	113	310 - General Office
3524A	CLAS	GES	100	103	310 - General Office
3526A	CLAS	GES	100	103	310 - General Office
3528	CLAS	GES	100	220	310 - General Office
3620	CLAS	GES	100	113	310 - General Office
3622	CLAS	GES	100	95	310 - General Office
			<i>Subtotal</i>	1076	
3522A	CLAS	GES	100	103	315 - Office Service
3526	CLAS	GES	100	113	315 - Office Service
			<i>Subtotal</i>	216	
			TOTAL	2143	

C. Audio Visual Renovation Plan

University of Colorado Denver
North Classroom Renovation
Audio-Visual Plan-General/Assignment Classrooms

Room	Actual	ASE	Projector(s)	Flat panel television displays and associated audiovisual connections (0% audiovisual Televisions)	Control	Integrated AV control system with keypad or touch panel interface.	Computer	Audio and/or media reinforcement system required. AV presentations camera required. (10% of Total Est. required. (2.5% of Total Est. required.	Desktop visualizer, doc cam for instructor videoconference presentations required. (2.5% of Total Est. required.	Lecture Capture and/or camera required. (2.5% of Total Est. required.	Videocapture CODEC and routing equipment required.	Installation, Engineering, Programming, Project Management	AV renovations in this area have major impact on infrastructure (0% of Total Est. required.	Power and data installed at student desk locations is required.	Estimated Cost*
NC 1130	281	\$19,000.00	\$19,000.00	\$9,500.00	\$28,500.00	\$9,500.00	\$9,500.00	\$19,000.00	\$4,750.00	\$4,750.00	\$66,500.00	\$19,000.00	X	?	\$190,000.00
NC 1202	72	\$3,200.00	\$3,200.00	\$1,600.00	\$4,800.00	\$1,600.00	\$1,600.00	\$3,200.00	\$800.00	\$800.00	\$1,200.00	\$3,200.00	X	?	\$32,000.00
NC 1204	72	\$3,000.00	\$3,000.00	\$1,500.00	\$4,500.00	\$1,500.00	\$1,500.00	\$3,000.00	\$750.00	\$750.00	\$1,125.00	\$3,000.00	X	?	\$30,000.00
NC 1207	95	\$3,400.00	\$3,400.00	\$1,700.00	\$5,100.00	\$1,700.00	\$1,700.00	\$3,400.00	\$850.00	\$850.00	\$1,275.00	\$3,400.00	X	?	\$34,000.00
NC 1311	35	\$1,800.00	\$1,800.00	\$900.00	\$2,700.00	\$900.00	\$900.00	\$1,800.00	\$450.00	\$450.00	\$675.00	\$1,800.00	X	?	\$18,000.00
NC 1312	35	\$1,800.00	\$1,800.00	\$900.00	\$2,700.00	\$900.00	\$900.00	\$1,800.00	\$450.00	\$450.00	\$675.00	\$1,800.00	X	?	\$18,000.00
NC 1313	40	\$1,800.00	\$1,800.00	\$900.00	\$2,700.00	\$900.00	\$900.00	\$1,800.00	\$450.00	\$450.00	\$675.00	\$1,800.00	X	?	\$18,000.00
NC 1314	40	\$1,800.00	\$1,800.00	\$900.00	\$2,700.00	\$900.00	\$900.00	\$1,800.00	\$450.00	\$450.00	\$675.00	\$1,800.00	X	?	\$18,000.00
NC 1316	35	\$1,800.00	\$1,800.00	\$900.00	\$2,700.00	\$900.00	\$900.00	\$1,800.00	\$450.00	\$450.00	\$675.00	\$1,800.00	X	?	\$18,000.00
NC 1321	40	\$1,800.00	\$1,800.00	\$900.00	\$2,700.00	\$900.00	\$900.00	\$1,800.00	\$450.00	\$450.00	\$675.00	\$1,800.00	X	?	\$18,000.00
NC 1322	40	\$1,800.00	\$1,800.00	\$900.00	\$2,700.00	\$900.00	\$900.00	\$1,800.00	\$450.00	\$450.00	\$675.00	\$1,800.00	X	?	\$18,000.00
NC 1323	40	\$1,800.00	\$1,800.00	\$900.00	\$2,700.00	\$900.00	\$900.00	\$1,800.00	\$450.00	\$450.00	\$675.00	\$1,800.00	X	?	\$18,000.00
NC 1324	36	\$1,800.00	\$1,800.00	\$900.00	\$2,700.00	\$900.00	\$900.00	\$1,800.00	\$450.00	\$450.00	\$675.00	\$1,800.00	X	?	\$18,000.00
NC 1325	47	\$2,300.00	\$2,300.00	\$1,150.00	\$3,450.00	\$1,150.00	\$1,150.00	\$2,300.00	\$575.00	\$575.00	\$862.50	\$2,300.00	X	?	\$23,000.00
NC 1326	42	\$1,800.00	\$1,800.00	\$900.00	\$2,700.00	\$900.00	\$900.00	\$1,800.00	\$450.00	\$450.00	\$675.00	\$1,800.00	X	?	\$18,000.00
NC 1402	48	\$2,800.00	\$2,800.00	\$1,400.00	\$4,200.00	\$1,400.00	\$1,400.00	\$2,800.00	\$700.00	\$700.00	\$1,050.00	\$2,800.00	X	?	\$28,000.00
NC 1408	55	\$3,000.00	\$3,000.00	\$1,500.00	\$4,500.00	\$1,500.00	\$1,500.00	\$3,000.00	\$750.00	\$750.00	\$1,125.00	\$3,000.00	X	?	\$30,000.00
NC 1511	55	\$3,000.00	\$3,000.00	\$1,500.00	\$4,500.00	\$1,500.00	\$1,500.00	\$3,000.00	\$750.00	\$750.00	\$1,125.00	\$3,000.00	X	?	\$30,000.00
NC 1515	55	\$3,000.00	\$3,000.00	\$1,500.00	\$4,500.00	\$1,500.00	\$1,500.00	\$3,000.00	\$750.00	\$750.00	\$1,125.00	\$3,000.00	X	?	\$30,000.00
NC 1521	55	\$3,000.00	\$3,000.00	\$1,500.00	\$4,500.00	\$1,500.00	\$1,500.00	\$3,000.00	\$750.00	\$750.00	\$1,125.00	\$3,000.00	X	?	\$30,000.00
NC 1525	48	\$3,000.00	\$3,000.00	\$1,500.00	\$4,500.00	\$1,500.00	\$1,500.00	\$3,000.00	\$750.00	\$750.00	\$1,125.00	\$3,000.00	X	?	\$30,000.00
NC 1533	35	\$1,800.00	\$1,800.00	\$900.00	\$2,700.00	\$900.00	\$900.00	\$1,800.00	\$450.00	\$450.00	\$675.00	\$1,800.00	X	?	\$18,000.00
NC 1535	120	\$9,800.00	\$9,800.00	\$4,900.00	\$14,700.00	\$4,900.00	\$4,900.00	\$9,800.00	\$2,450.00	\$2,450.00	\$3,675.00	\$9,800.00	X	?	\$98,000.00
NC 1539	168	\$11,100.00	\$11,100.00	\$5,550.00	\$16,650.00	\$5,550.00	\$5,550.00	\$11,100.00	\$2,775.00	\$2,775.00	\$4,162.50	\$11,100.00	X	?	\$111,000.00
NC 1602	46	\$2,800.00	\$2,800.00	\$1,400.00	\$4,200.00	\$1,400.00	\$1,400.00	\$2,800.00	\$700.00	\$700.00	\$1,050.00	\$2,800.00	X	?	\$28,000.00
NC 1603	48	\$2,800.00	\$2,800.00	\$1,400.00	\$4,200.00	\$1,400.00	\$1,400.00	\$2,800.00	\$700.00	\$700.00	\$1,050.00	\$2,800.00	X	?	\$28,000.00
NC 1605	48	\$2,800.00	\$2,800.00	\$1,400.00	\$4,200.00	\$1,400.00	\$1,400.00	\$2,800.00	\$700.00	\$700.00	\$1,050.00	\$2,800.00	X	?	\$28,000.00
NC 1607	72	\$4,700.00	\$4,700.00	\$2,350.00	\$7,050.00	\$2,350.00	\$2,350.00	\$4,700.00	\$1,175.00	\$1,175.00	\$1,762.50	\$4,700.00	X	?	\$47,000.00
NC 1608	95	\$4,800.00	\$4,800.00	\$2,400.00	\$7,200.00	\$2,400.00	\$2,400.00	\$4,800.00	\$1,200.00	\$1,200.00	\$1,800.00	\$4,800.00	X	?	\$48,000.00
NC 1806	67	\$2,800.00	\$2,800.00	\$1,400.00	\$4,200.00	\$1,400.00	\$1,400.00	\$2,800.00	\$700.00	\$700.00	\$1,050.00	\$2,800.00	X	?	\$28,000.00
NC 2001	47	\$2,300.00	\$2,300.00	\$1,150.00	\$3,450.00	\$1,150.00	\$1,150.00	\$2,300.00	\$575.00	\$575.00	\$862.50	\$2,300.00	X	?	\$23,000.00
NC 2002	47	\$2,300.00	\$2,300.00	\$1,150.00	\$3,450.00	\$1,150.00	\$1,150.00	\$2,300.00	\$575.00	\$575.00	\$862.50	\$2,300.00	X	?	\$23,000.00
NC 3004	48	\$2,300.00	\$2,300.00	\$1,150.00	\$3,450.00	\$1,150.00	\$1,150.00	\$2,300.00	\$575.00	\$575.00	\$862.50	\$2,300.00	X	?	\$23,000.00
		\$117,500.00	\$117,500.00	\$58,750.00	\$176,250.00	\$58,750.00	\$58,750.00	\$117,500.00	\$29,375.00	\$29,375.00	\$44,062.50	\$117,500.00	\$0.00	\$0.00	\$1,175,000.00

* Audiovisual Budget Exclusions: Classroom/Lab furniture; Classroom/Lab interactive and/or dry-erase whiteboards; Classroom/Lab electrical (new, or retro-fit) infrastructure, Classroom/Lab IT data (new or retro-fit) infrastructure, Classroom/Lab flooring, ceiling tiles, lighting, security, signage

Total Estimated Cost*	\$1,175,000.00
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