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#### **EXECUTIVE SUMMARY**

Metropolitan State College of Denver is one of the largest, most successful four year colleges in the western United States. It is in a rapidly growing state of expansion and it's enrollments are growing at a steady rate. Until recently, this has been complicated by the fact that its programs have been barely surviving in outdated and cramped facilities over the past three decades.

Today, Metro State is in the midst of a new era, one of expansion and quality improvement. The College is involved in a major renovation and expansion of its Science Building (with the University of Colorado Denver and the Community College of Denver) and is in the design stages of its new building, the Student Success Center. These two projects have provided the College the necessary expansion needed to support programs as well as the opportunity to improve existing resources.

The Metro State Backfill Program Plan is the next phase of a long range plan to improve Metropolitan State College of Denver's facilities. Following the Science Building renovation and the opening of the Student Success Center, the College will have the opportunity to improve its existing facilities. This program plan outlines how Metro State will upgrade, renovate, and reuse existing space in three buildings to support academic and support service programs critical to it mission.

In recent years, and compounded by today's economy, Metro State is experiencing major enrollment increases. These increase then place a stress on faculty and staff support. In the last year alone, enrollment has increased by 5.5%. Continued enrollment growth is anticipated, driving faculty and staff growth projections. Metro State is also pursuing

graduate programs at the masters level in Teacher Education, Accounting and Social Work, which affects both staffing and facility needs.

The planning team studied the effects of these increases on College facilities, as well as the impact of addressing many significant space deficiencies the College is currently operating under, including shortages of faculty spaces, dedicated classroom and specialized lab spaces. Projections indicate approximately 168,012 square feet to support this demand. As planned, the College will have 74,949 square feet in three of its buildings available once the new Student Success Center is complete. The remaining deficit is satisfied in Arts, Technology, King Center and other existing space.

The three primary buildings included in the backfill project are the Administration, Central Classroom, and West Classroom Buildings. There will be approximately 129,199 gross square feet of space within these buildings that will be repurposed and improved to support programs not addressed by either the Science Building or Students Success Center projects. The scope of each improvement is as follows.

Administration Building —There will be approximately 25,573 on the 2nd, 4th, and 5th floors available before the Student Success Center is constructed. This will first be used as swing space to house the College's Science programs. These programs will need to be temporarily relocated from the existing Science Building during the renovation. Once that is complete (scheduled for January of 2011), the Science Department will move back into their Building making the space in Administration

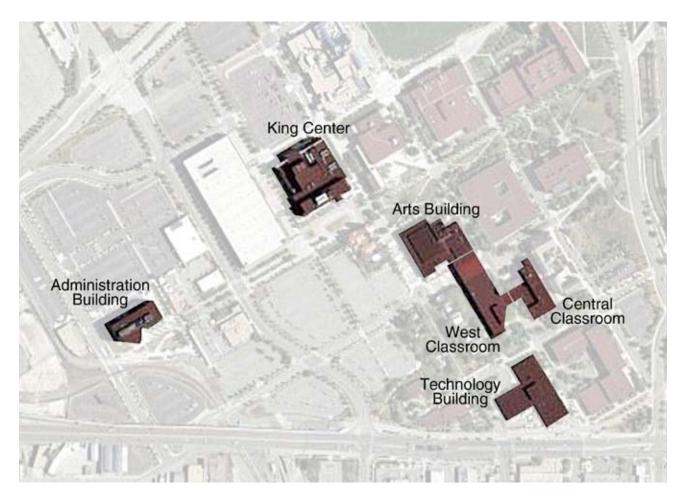
#### 1.0 Executive Summary

available for the School of Business. A total of approximately 32,873 square feet will be remodeled to accommodate their needs. Two new shared classrooms will be created as part of this remodel.

Central Classroom—Moves will free up approximately 37,500 square feet in the Central Classroom Building. A total of approximately 53,644 square feet of space will be remodeled. This will be remodeled primarily for use by Letters, Arts, and Sciences, but also for the School of Professional Studies. Three new (shared) classrooms will be included.

West Classroom—Through moves approximately 11,890 square feet will be available in the West Classroom Building. Overall approximately 28,314 square feet will be renovated. This will be for the School of Professional Studies, the Vice President for Information Technology, and five new classrooms.

King Center, Art Building and Tech Building—Small pockets of space in these buildings are being impacted as part of the backfill plan. A total of 16,317 square feet will be occupied and/or remodeled to some extent.



In addition to proving the much needed space for each program, upgrades will be made to building systems, equipment, furnishings and technologies in the areas being impacted by remodel. Many of these spaces have not been improved since originally constructed.

All of the groups in the study requested an average increase of approximately 55% growth in space to cover their requirements for the coming five-year timeframe. The amount of space becoming available for the groups with the completion of the Science Building and the Student Success Building does not equal the requests, however, the space has been allocated as evenly as feasible. The

erage ce ing the ilding actual increase in space is approximately 41% over current, which equates to 75,000 square feet for Metro State in the Administration, Central and West Buildings. This increase in space is allocated to 10 additional classrooms, departmental offices, instructional space and support space. As the requested space exceeds the available space overall, the next phase of the project will determine how each school and department prefers to allocate their given space if there is a deficiency.

#### Schedule

It is anticipated the renovations and moves will begin as early as January of 2011 (assuming design

Metro State College
Backfill Project
Space Summary Comparison

Building	Space Vacated By Moves to Science &	Space Being Remodeled	Total Space To Be Occupied By Metro
	Student Success	Remodeled	in Backfill Project
	Bldgs.		
Administration	25,573	32,873	49,974
Central	37,486	53,644	55,013
West	11,890	28,314	46,708
King		9,197	9,197
Art		3,342	3,342
Tech		1,829	3,778
TOTALS	74,949	129,199	168,012
	Athletics, & Math Lab (		10,291
Total Programmed S	Space		157,721
Total Space Needs Re	equested (including clas	srooms)	
Total Classroom space	51,189		
Total Non-Classroom space deficiency			

# 1.0 Executive Summary

starts in January of 2010) and be complete in June of 2013. A very detailed sequencing has been studied to assure renovations and moves are do not affect programs in a negative way. The coordination of construction to minimize moves, noise, and disturbance requires a two phased approach with numerous sub phases in each. This lengthens the schedule but has the least impact on programs. The following summary outlines the major steps in the process.

# Phase I - Begin January 2011 (+/- 36 Weeks)

- Admin 4th Floor: Athletics, VPIT
- Admin 2nd and 5th Floor: Business, Classrooms
- Central Classroom 3rd Floor: LAS Political Science, VPIT
- West Classroom 2nd Floor: SPS Health Professions, Nursing, Classrooms

# Phase II - Begin April 2012 (+/- 58 Weeks)

- Central Classroom 1st Floor: SPS Tech Com, LAS History, SAB, AAS Int. Studies, VPAA Honors
- Central Classroom 2nd Floor: LAS Social Work, History, VPAA-ETC
- Central Classroom 3rd Floor: LAS English, Dean's Office
- West Classroom 1st Floor: SPS Admin, SPS Criminal Justice, TEED
- West Classroom 2nd Floor: VPIT, classrooms, **SPS TEED**

#### **Project Budget**

Campus staff, architectural consultants, and

professional cost estimators prepared a cost estimate for the project once the scope of improvement were identified. This plan outlines the details and complexities of the numerous renovations, improvements, and relocations. It is estimated the project will cost \$10,342,460 and is summarized as follows.

Construction	\$	6,838,352
Professional Fees, Testing, Management	\$	1,185,500
Equipment and Furnishings	\$	1,110,000
Art in Public Places	\$	68,384
Relocation Costs	\$	200,000
Contingency (10%)	\$	940,224
TOTAL	\$-	10,342,460

It has been decades since the facilities for Metropolitan State College of Denver have been improved. Many spaces are as they were when constructed between 30 and 40 years ago. This backfill completes the three phased approach (Science Building Addition and Renovation and Student Success Center building as the first two phases) in bringing the College's facilities into the 21st century.

#### PROGRAM METHODOLOGY

This programming process was driven primarily by the parameters defined by the finite vacant space that will become available to distribute between Metro State's School of Business, School of Letters, Arts and Sciences, and School of Professional Studies after the completion of the Science Building and new Student Success Building.

An analysis of the most current occupancy drawings provided by Metro State resulted in an accurate measurement indicating the square footage each Department/Program occupies. Each School then identified critical current deficiencies in instructional, faculty/administration, and support spaces. Total space requests were then defined based on current occupancy, addressing critical deficiencies and applying growth assumptions for the next five years. In addition, planning standards were applied assuming that, where possible, Metro State will create more consistency in office space, classroom sizes, and support areas, as there is little consistency from department to department today. Factors that significantly impact the space needs include the goals to eliminate shared tenured faculty offices (which in many cases are shared by two to four faculty, as illustrated by the School of Letters, Arts and Sciences where over 50% of their full time faculty share an office), provide some space for adjunct faculty (where there is very little available, or none at all today), increase classroom space on campus, and increase support spaces such as storage, and meeting space.

The School Deans and College Provost reviewed, refined and approved the final numbers as shown, with the understanding that their requests cannot be fully met in the space available within the

Administration, Central and West Buildings (the King Center and Arts Buildings also provide a small amount of additional space for the Theater and Music Departments). The College administration identified their most critical needs in order to prioritize spaces that should be addressed in the backfill. The additional space requested that cannot be accommodated with the implementation of this backfill project will continue to be reassessed after the completion of the Student Success Building as enrollment projections are reviewed and adjusted.

After the tabulation of the space requests was completed, test fits were developed to explore how best to fit the priority needs into the space available. Consideration was also given to meet adjacency requirements, minimize disruption by leaving groups in their current locations where possible, and be cost effective by minimizing the degree of remodeling needed in each area.

Preliminary block plans were reviewed with Metro State's Backfill Project Committee, and then refined to reflect the feedback received, including addressing a more equitable distribution of the space available to each School.

The final plans indicate groups that are staying in place, expanding, or moving. The plans also indicate the anticipated degree of remodel required to accommodate the needs of each department. These drawings were used to guide the development of the phasing plans and cost estimates.

#### **HISTORY / ROLE / MISSION**

#### **History**

Metropolitan State College of Denver was created by an act of Colorado Legislature in 1965. By statute, it is a comprehensive and baccalaureatedegree granting institution. It opened its doors in downtown Denver, across Speer Boulevard, just north and east of its current Auraria campus location.

The current Auraria campus is located at the former townsite of Auraria, which was founded in November 1858. Denver was founded three weeks later across Cherry Creek. Denver would overtake Auraria, yet to the present day, there is still an Auraria neighborhood in Denver. The boundaries of the neighborhood are Colfax Avenue on the south, the South Platte River on the northwest and Cherry Creek on the northeast. The Auraria Campus now dominates this area.

Auraria had a mix of residential areas and industrial areas through the mid-20th century. When the campus was built, many Aurarians, a majority of them Hispanic, were displaced and the school promised to serve the community. Tivoli Brewery brewed beer in Denver until it closed. The Tivoli now serves as a Student Union to all three schools on the campus. Two churches are still on the campus, St. Elizabeth's Church and St. Cajetan's. The Emmanuel Gallery, which is the oldest synagogue structure in Denver, is on the campus as well.

#### **Today**

With over 22,000 students, Metropolitan State College of Denver is one of the largest public baccalaureate colleges in the country. It is has experienced steady enrollment increases in 10 of the past 11 years, making it the second-largest undergraduate student population in Colorado. There are more transfer students that enroll at Metro State than any other college or university in the state. At the same time, few students transfer from Metro State to other institutions.

Metropolitan State College of Denver offers over 50 majors, over 80 minors, and over 40 certificate programs, along with new innovative and individualized degree development. More than 300,000 Coloradans have taken classes at Metro State for career advancement and personal enrichment. The four year college can boast more than 63,000 alumni, nearly 80 percent of whom stay in Colorado after graduation. These graduates fuel Colorado's economy as teachers, business owners, pilots, scientists, nurses and more and enter graduate school to study medicine, law and other disciplines requiring advanced degrees.

#### Role

Metropolitan State College of Denver (MSCD) is Colorado's urban "College of Opportunity." Accessibility is reflected in the admissions requirements and is an important part of the college's mission. The focus of teaching is implicit in the restriction to undergraduate programs. This gives the institution a unique focus driven by Colorado State Statute.

Metro State is required to serve adult students.
 First time college students who are 20 years of age or older and hold a GED or high school diploma are automatically admitted irrespective of their academic record.

- Metro State is required to serve traditionally aged students of all levels of achievement and potential.
   As a result, the College enrolls a rich mix of recent high school graduates, many with excellent grades and test scores and others with more modest achievements.
- Metro State is required to be accessible to all citizens. Tuition has been and remains to be among the lowest in the state of Colorado.
- Metro State awards Bachelors of Science,
   Bachelors of Arts and Bachelors of Fine Arts
   degrees. Students choose from over 50 majors and
   minors offered through three Schools: Business,
   Professional Studies, and Arts and Sciences.

#### **Mission**

Metropolitan State College of Denver is a comprehensive, baccalaureate degree-granting urban college that offers arts and sciences, professional, and business courses and programs to a diverse student population.

The mission of Metro State College of Denver is to provide a high-quality, accessible, enriching education that prepares students for successful careers, post-graduate education, and lifelong learning in a multicultural, global, and technological society. To fulfill its mission, Metro State College of Denver's diverse college community engages the community at large in scholarly inquiry, creative activity, and the application of knowledge.

Metropolitan State College of Denver's vision is to be recognized as the preeminent public urban baccalaureate college in the nation.

#### **ORGANIZATIONAL STRUCTURE**

Metropolitan State College of Denver is governed by the Board of Trustees through the Office of the President. The College is administered through the following five divisions, each of which report directly to the Office of the President.

- Vice President of Academic Affairs
- Vice President of Administration and Finance
- Vice President of Student Services
- Vice President of Institutional Advancement
- Vice President of Information Technology

Each of the above divisions are broken into numerous departments and programs. These are articulated in the next section.

In the spring of 2008, the Interim Provost and Vice President for Academic Affairs formed a broad-based committee to review the organizational structure within the Academic Affairs Division (see organizational chart in Appendix).

The College has numerous programs which support the business strategies promoting student success. The academic structure is comprised of three core schools, the School of Professional Studies, School of Business, and the largest core School of Letters, Arts, and Sciences.

#### PROGRAM DESCRIPTIONS

# Metropolitan State College of Denver's **Auraria Campus Institution Partners**

The Auraria Higher Education Center is the largest campus of higher education in the State of Colorado. It is comprised of three separate institutions that serve over 39,000 students as of the fall of 2008. The Community College of Denver (CCD), Metropolitan State College of Denver (MSCD), and the University of Colorado Denver (UCD) share classroom space and general services on the commuter campus located in downtown Denver.

Auraria's cost effective, non-traditional environment allows students to select from a wide range of educational choices. Classes are offered from 7:30am-10:00pm, Monday through Friday. Classes are also held weekends as well. The institutions have expanded their offering of hybrid course those that have a classroom and on line component. The institutions are seeing a great amount of growth in on-line classes, and while that is a popular option for some students, it is becoming a necessity because existing facilities do not have adequate classroom capacity or availability to support this growth.

CCD is a two-year institution offering more than 125 program that lead to an associate degree or certificate, as well as help prepare students for a new career or job advancement. CCD guarantees that general education core curriculum credits will transfer to any Colorado four-year college or university.

The Community College of Denver is a gateway to create academic and career competitiveness that meets the evolving economic, educational and cultural needs to diverse communities. CCD's mission is to provide "Education and Opportunity in a Diverse World." Through this mission, the college pledges to provide:

- 1) Programs that transfer to a baccalaureate dearee:
- 2) Occupational programs for job-entry or upgrading skills;
- 3) General education courses:
- 4) Developmental education and community services; and
- 5) Cooperative inter-institutional programs with Metropolitan State College of Denver and University of Colorado Denver.

University of Colorado Denver is the only public university in the immediate Denver area. They offer a mix of undergraduate programs, master's degrees as well as Ph.D. degrees in public affairs, applied mathematics, health and behavioral sciences, civil engineering, and educational leadership. The mission of UCD 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. Their vision is that by 2020 UCD will be a leading public university with a global reputation for excellence in learning, research, and creativity, community engagement and clinical care. UCD has two campuses - the Anschutz Medical Campus in Aurora and the Downtown Campus in Denver.

# Letters, Arts, and Sciences

As the largest school at Metropolitan State College of Denver, offers degrees in the fine and performing arts, humanities, social sciences, mathematics and the natural sciences. There are 18 departments and 1 institute with 36 majors, 40 minors, and 11 certificates. In addition to these majors and minors, the school provides support for students interested in designing their own degree programs through the Center for Individualized Learning.

The mission of the School is to provide an environment of teaching and learning that honors tradition and supports imagination. Degrees in the liberal arts and sciences prepare students for successful careers and a lifetime of learning. Critical thinking is encouraged in an atmosphere of inquiry and creativity where students develop their writing, research, analytical as well as communication skills.

# African American Studies (International Studies)

The Department of African and African American Studies was founded in 1971. The Department offers a major, major with licensure for secondary social studies, and a minor. All programs offer a range of courses that provide students with a comprehensive curriculum that address various dimensions of the Black experience.

#### Communication Arts and Sciences

The Department of Communication Arts and Sciences offers Bachelor of Arts Degrees in Journalism, Speech Communication, and Theatre.

The Journalism program prepares students for careers in traditional and convergent media. A solid education is offered in the basics of journalism with baccalaureate degrees earned in the emphases of News & Editorial, Photojournalism, Magazine, Convergent Journalism, Social Documentary and Public Relations, and Journalism Minors.

The Speech, Language, and Hearing Sciences program provides a sound background for students pursuing careers in education, health care, and vocational rehabilitation. Graduates in Speech, Language, Hearing Sciences who complete the SLHS major will have the prerequisite coursework to pursue a graduate degree in speech-language pathology or audiology, which opens careers in schools, community clinics, hospitals, rehabilitation centers, and private practice.

Additionally, the SLHS program offers an optional concentration in Childhood Communication and two certificates. The Speech-Language Pathology Assistant Certificate prepares students to become Speech-Language Pathology Assistants (SLPAs) and the Leveling Certificate allows students with a bachelor's degree in another field to show they have completed the prerequisite coursework to apply to graduate school in speech-language pathology or audiology.

The Speech Communication Department offers a Bachelor of Arts Degree in Speech Communication with several emphases, including Speech, Language, Hearing Sciences, Communication Theory, Organizational Communication, Public Address & Rhetoric, and Broadcasting & Telecommunications.

# History

The History Department serves thousands of Metro State students, whether they are seeking General Studies Level II credit, pursuing a History major or minor, fulfilling teaching licensure requirements, or satisfying intellectual curiosity. It offers a wide variety of courses such as Native Americans in American History, Ireland and the Irish, History of China, and History of India.

# 4.0 Program Descriptions

### Philosophy

The mission of the Metro State Philosophy
Department is to provide students, ourselves,
and our community with both formal and informal
occasions to reflect upon and engage in, in a
serious and systematic way, the great human
conversation about the nature and meaning of
human existence, with an eye to our correlative
commitments to the concepts of truth, freedom and
opportunity.

Philosophy holds fast to a pursuit of the truth and an examination in which no questions are barred and in which no result is unconsidered, regardless of their beauty, utility, political correctness, or popular appeal. Philosophy names the occasion for the mutual pursuit of truth by faculty and students. But in order to maintain a lively connection with and to contribute to the ongoing endeavor that is philosophy, an essential element of this mission of this department is the fundamental activity of continuing education and professional contributions in the forms of talks, communications, commentary, papers and monographs.

# English

The English program provides a foundation in literature, language, writing, and teaching. The focus is to strengthen students ability to command the written language, have the ability to analyze concepts, and understand the human nature and social realities enabling them to be competitive in a variety of fields.

#### Political Science

Political science is the study of government, public policy, and the political behavior of both individuals

and groups at all levels of community life. By employing humanistic and scientific perspectives to study nations and their sub-divisions, as well as regions of the world and international relations, students in the political science program acquire critical skills in analysis and communication which allow them to think independently and tolerantly about current affairs in our diverse world.

#### Behavioral Science

The behavioral science major is a bachelor of arts degree designed to provide students with a broad-based education in the social sciences. This major introduces students to the disciplines of Anthropology, Economics, History, Political Science, Psychology, and Sociology.

The behavioral science major is applicable toward teacher licensure at the elementary and secondary levels. Students interested in specific areas of work upon graduation work closely with advisors to build strengths in particular areas that will assist the student in pursuing jobs in government, business, the justice system, or community and social services.

# Anthropology

Anthropology provides a cultural basis to explore contemporary problems of human diversity; an archaeological foundation to focus on the totality of human experience from its beginnings to the present; and physical anthropology to delve into the exploration of physical human differences. The bachelor of arts degree prepares students to collect and analyze data, material and cultural, to assist you in basic scientific problem solving. You'll learn through hands on work both in the field and in the classroom.

# Sociology

An undergraduate sociology major prepares students for the world of organizations, government, business, and industry. It provides valuable insights into social factors such as race, ethnicity, gender, age, religion, education, and social class that affect work, groups, and organizations. The sociological perspective is crucial for working in today's multiethnic and multinational business environment.

The program focuses on applied sociology, which is the use of sociological methods to solve everyday social problems.

#### Social Work

The focus of the Social Work Department is on problems that often affect oppressed minorities representing people of color (African American, Hispanic, Native American, Asian American) and other diverse populations (women and children, gays and lesbians, the developmentally delayed and the aging). The department is committed to helping those individuals in need and working toward leadership in the social, economic and political context that often fosters painful and socially unjust human conditions.

#### Institute for Women's Studies

The Institute offers a unique combination of an academic women's studies program with the types of services and activities typically offered through a women's center. In addition to information about women's studies and the types of services, the Institute offers a database of community scholarships to assist students in seeking financial support for their education and information about

local community resources for students in need of resources. The Institute sponsors a number of events and activities throughout the academic year focused on feminism and social justice.

# Other Letters, Arts, and Sciences Programs

Many of the School's Science programs are not included in this study since they will be located in the new Auraria Science Building. Departments such as Biology, Chemistry, Earth and Atmospheric Sciences, Mathematics and Computer Science and Physics are not affected by the three facilities in this plan. The performing arts programs such as the Music program is located in the King Center. Other programs not included in this study include Chicano Studies, the College Assistance Migrant Program, the Dean's Office, International Studies, Modern Languages, and Psychology.

#### **School of Business**

Located on the Auraria Campus, Metro State has a diverse student and faculty population in the heart of Downtown Denver. Such diversity contributes to a more enriching educational experience. In the hub of the Denver business community, Metro State is building partnerships to reflect its dedication to the Colorado business community. Such alliances will build bridges between the business community and students entering the workforce.

The School of Business offers students a variety of educational opportunities that either lead to a bachelor's degree or provide opportunities for non-degree seeking students to gain additional undergraduate education through our extensive course offerings and certificate programs.

# 4.0 Program Descriptions

# Accounting

Accounting is more than just numbers; it is a dynamic, growing discipline. Accounting programs provide students with a wide range of skills: computer knowledge for business planning, software design, interpersonal, oral, and written communication skills for working with colleagues and clients, for writing financial reports and making business presentations. Students develop critical thinking, problem solving, and communication skills, along with technical competence and the ability for self-directed, lifelong learning.

# Computer Information Systems

The Computer Information Systems academic program offers a broad variety of interesting courses, from general overview to special skills, from business applications to programming tools, from productivity software to cutting edge developing environments.

#### **Economics**

Economics is the scientific study of the allocation of scarce or limited resources among competing uses. The program provides specialized and general knowledge of the operation of economic systems and institutions. The bachelor of arts degree gives students a fundamental knowledge of domestic and foreign economies and the quantitative tools necessary for independent analytical research and thought. Specialized courses develop the student's ability to apply the tools of economic theory and analysis to a broad range of social, political, and economic issues.

# Finance

The Finance program at Metropolitan State College of Denver prepares students for the

challenges of the future in financial institutions, international finance, financial management, investments, personal financial planning: retirement, insurance, estate planning, real estate: investment, management, operations, financing and brokerage.

# Management

The Department of Management prepares students to pursue careers in human resource management, operations management, general management, or entrepreneurship. The curriculum provides students with the qualities and skills that every successful manager needs. A minor in Management prepares individuals for the important tasks of supervising others, working in teams, and taking on additional responsibilities in their field.

#### Marketing

The Marketing program provides courses of study in planning and strategy, creating/implementing promotional campaigns, selling, numerical analysis, and other aspects of selling product or promoting business. Learn effective marketing strategies for the long-term success of any business organization. Learn strategies to assure a business or firm attracts, retains, and grows customers by creating, delivering and communicating superior customer value.

#### **School of Professional Studies**

The Department of Professional Studies integrates liberal arts and sciences with theory and application in the professional disciplines. This mission is achieved with classroom study and through many unique field placements, internships, and teaching placements made each semester where our students have the opportunity to apply the knowledge and skills that they have learned within

the classroom. The school is comprised of eleven academic departments and five centers.

#### Criminal Justice and Criminology

Students in criminal justice classes study the functions of, and interactions among, police, courts, and corrections systems. Course blend theoretical examination and practical application, ranging from human behavior and social structure to management principles and supervisory skills

#### Technical Communication and Media Productions

Technical Communication and Media Production program teaches students how to apply the underlying theories and principles of the discipline to communicate information to a specific audience using the appropriate communication medium, whether the medium be print, video, audio, multimedia technology, or a combination of other media.

#### Health Professions

Metropolitan State College of Denver's undergraduate degree program in Health Care Management prepares competent individuals for direct entry into management within the health care field. By combining courses in health care management with other disciplines, such as marketing, computer management science, accounting and economics, the program gives students a strong foundation in management as it specifically relates to the health care industry.

The Integrative Therapeutic Practices program offers students courses that integrate the most recent scientific evidence with the oldest of healing traditions. The program draws from disciplines such as health education services, health care management, biology, chemistry, and nutrition.

Students examine the diverse factors that impinge on an individual's health and well-being. Students receive a broad-based understanding of the principles of human health and disease, the theories underlying healing practices, and the scientific research methods needed to evaluate the latest techniques in this dynamic field.

The Recreation Professions major prepares students with the knowledge and skills for employment in municipal, military, commercial/private, clinical, outdoor, campus, park, and not-for-profit settings.

#### **Human Services**

Welcome to the Metropolitan State College of Denver Department of Human Services. An education in human services prepares students to become professionals in the art and science of helping others. The learning objectives of the human services curriculum address the need for professionals trained in applying behavioral science through the compassionate art of assisting people to meet the challenges of living.

# Nursing

The Nursing program is designed for students who have graduated from an Associate Degree or Diploma Nursing Program, have a current Colorado RN License in good standing and who wish to earn a Bachelor of Science in Nursing. This program allows working RNs to complete their BSN at a pace that allows full employment.

# Reserve Officer's Training Corp

The Reserve Officer's Training Corp was nonexistent on campus from 1992 to 2007. Metro State cadets drove to the University of Colorado Boulder to be part of ROTC. The College is now considering

the Mile High Company under the University of Colorado's ROTC program. It is possible the MSCD program will become an independent program in 2011 when it gets its first 10+ commissioning class.

#### Teacher's Education

The Teacher Education program prepares students to apply to the Colorado Department of Education for licensure. Students entering the program are typically either "degree seeking" undergraduates or "licensure only" graduates who have previously earned baccalaureate degrees. This is one of the largest and best teacher education programs in the state. Students have the opportunity to learn from highly qualified educators in professional education and content area studies, as well as from experienced public school teacher practitioners.

The program Teacher Education program provides a curriculum that recognizes the multi-cultural composition of the population served, the centrality of standards based education, the role of schools in a democratic society, the importance of existing knowledge about learning and teaching, and the role of technology in instruction.

There are multiple licensure programs the teach education program prepare a student for. One popular program is the Childhood Education, Secondary Education, and Special Education

# Other Departments and Programs

The School of Professional Studies has numerous other departments and programs which are not part of this study. These are located in facilities that will not be part of the renovations under the program plan scope of work. These include Aviation and Aero Space, Civil Engineering, Electronics Engineering Technology, Engineering Technology, Hospitality, Tourism, and Events,

Human Performance and Sport, Industrial Design, and Mechanical Engineering.

#### President's Office

The President's Office will be located in the new Student Success Center and will are not considered part of this study. This includes the Administration, General Counsel, Internal Auditor, Equal Opportunity, Faculty Senate, and Intercollegiate Athletics Departments considered as part of the President's Office.

#### Vice President Administration and Finance

The Administration and Finance Division will be moving from the Administration and Central buildings into the new Student Success Center. Programs in this division consolidating there include Human Resources, Facilities Planning and Space Management, Budgets, Institutional Research, Controller, Retirement Plan Administration, Data Research and Analysis. These are not considered part of this study since all their needs are being met in the new facility.

# Vice President Institutional Advancement and Executive Director of the Foundation

Instructional Advancement and Foundation is comprised of six departments; Sponsored Research and Programs, College Communications, Development, Foundation, Alumni Relations, and the Institutional Advancement Administration. These programs are moving to the new Student Success Center and are not considered part of this study.

# **Vice President Information Technology**

The Division of Information Technology oversees all computing services for faculty, staff and students. IT provides support for administrative

applications, as well as desktop support for faculty and staff. Training is offered on a regular basis with classes available on a wide variety of software packages. IT maintains campus email services and provides oversight of Metro State's Web pages. The Information Technology staff is committed to providing the most current technologies to every member of the Metro State community. The Division also supports the College's application process and plays an integral role in assuring the technology infrastructure is dependent and secure.

#### Vice President Academic Affairs/Provost

# **Education Technology Center**

The Educational Technology Center (ETC) exists to collaboratively enhance teaching and learning, through the innovative and effective use of educational technology. The ETC designs, develops, implements and supports systems, services and products which are essential to teaching and learning both online and in the classroom. The ETC supports instructional technologies that contributes to Metro State's academic excellence by increasing student engagement with course materials, supporting active learning strategies, fostering communication and collaboration, streamlining course administration and assisting students in developing their skills for future learning and work.

# Center for Faculty Development

The Center for Faculty Development serves the faculty of Metro State by promoting all facets of their professional responsibilities, which include teaching and learning, professional development, service, and advising. The goal at the Center for Faculty Development is to work with faculty to strengthen their contributions to Metro State's educational

mission. Successful faculty are the foundation of excellence in higher education, and the resources and personnel of the Center for Faculty Development are committed to promoting their professional development as teachers, scholars, and leaders.

The Center for Faculty Development (CFD) accomplishes its mission through a variety of initiatives that include, but are not limited to, workshops on teaching and learning, faculty professional development conferences, new faculty mentoring, online learning workshops, and workshops and training for department chairs. The CFD is also available for one-on-one consulting for any faculty member who seeks input and assistance in any area of their professional lives. The CFD has a growing collection of resources and materials on the topic of faculty development, and if we do not have the expertise or materials to address individuals' requests or needs, we will find them and make them available.

#### Honor's Program

The Metro State Honors program provides an intense, interdisciplinary, academic program for highly motivated, intellectual students. The program encourages individuality through an enriched core curriculum that leads to a bachelor of arts or bachelor of science degree. Courses are taught by professors from different academic disciplines who possess exemplary teaching skills. This integrated approach strengthens the program's foundation and provides a cross section of thought-provoking perspectives.

While the program encourages independent thought and individuality, it also inspires students to work together, forming a community of scholars who

# 4.0 Program Descriptions

learn from one another. Classes are small to ensure the exchange of knowledge and philosophies.

#### Other Programs

Academic Affairs is a very diverse division. The above programs are included in this study since their best location is in one of the three buildings involved in the backfill. Programs within the division that are moving to the new Student Success Center include; the Center for Innovation, Academic Advising, TQE Grant, Academic Policy, Extended Campus Programs, Academic Affairs Administration, Center for Individualized Learning, Cooperative Education an Service Learning, and the Urban Teacher Partnership/Internship Program.

**Student Services** 

There will not be any Student Service programs included in this study. Many of these programs were studied and included as part of the Student Success Center. Many of the Student Services Departments and programs will be moving to the new Student Success Center due to their integral role in objectives of the new building. These include Student Academic Services, Admissions and Outreach, Financial Aid, Special Initiatives for Alumni Affairs, the Registrar and the Student Services Administration.

Other programs are moving to the Tivoli Student Union because of their focus in student life, support, and social programs. These include Student Life, Student Activities, the Counseling Center, Career Services, Student Judicial Office, Assessment and Specialized Testing, and New Student Orientation.

Remaining programs such as Campus recreation will remain located in the Physical Education and Recreation Building, Student Health in the Plaza

Building, Disability And Adaptive Technology in the Library, Admission and Outreach, High School Upward Bound, and Veteran's Upward Bound in their 9th Street Houses.

#### **RELATION TO STRATEGIC PLAN**

To realize the vision of the Metropolitan State College of Denver as a pre-eminent public urban baccalaureate college in the country, the college engages itself in a continuous strategic planning process. President Jordan and enthusiastically supported this initiative and believes in a strong strategic planning process to collectively gather the expertise of the college to help meet the ongoing challenges, seize opportunities, and chart a course toward excellence.

For Metropolitan State College of Denver, strategic planning is a dynamic process that begins with the vision of pre-eminence. Planning goals chart the future of the college; objectives and activities define a clear path to the goals. To realize pre-eminence, short-term and long-term decisions, including allocation of resources, are based on the plan. The process includes continuous improvement through periodic assessments of progress toward the following four major goals

- 1. Prepare students for success in their education, career and life.
- 2. Provide a high-quality educational experience.
- Engage, collaborate, and work with the community
- 4. Embrace and promote diversity.

Priorities established through the strategic planning process for fiscal year 2009-2010 in support of the strategic goals are as follows.

- Achieving designation as an Hispanic Serving Institution by 2015
- Becoming an urban land-grant institution
- Continue to increase full-time tenured and tenuretrack faculty

- The Student Success and Hotel Learning Center buildings of the Metro State neighborhood
- The major-gifts campaign to be launched once these economic downtimes turn
- Professional development of faculty and staff
- Master's programs

These goals provide the framework for decision making for MSCD's next decade and beyond. Each unit within the college prepares a series of objectives so the unit's detailed actions are assured to be aligned with the four major goals of the college. Each School then prepares its strategic plan aligning department and program objectives to the overall mission and vision of the College.

#### School of Business

The mission of the School of Business is to develop undergraduate students into effective and sought-after business professionals by preparing students for careers, and lifelong learning with an awareness of ethics, and ethical decision-making in a society characterized by technological advancements, and globalization.

The School of Business strives to facilitate learning through excellence in teaching by maintaining currency in the disciplines, using appropriate pedagogy, and providing individual attention to students.

The goal is to deliver a high-quality, accessible undergraduate business education in the metropolitan Denver area to a diverse student population.

# Letters, Arts, and Sciences

The primary mission of the School of Letters, Arts and Sciences is to effectively utilize all the energy and resources at the disposal of the school to

support the broader mission of the College. Building upon the traditions of the Academy, the community, and the faculty, LAS offers a broad variety of curricula which comprises a liberal education in the traditional sense. Its focus is on educating students to think critically as individuals and as citizens. General Studies course offerings provide the basic knowledge and skills necessary for all degree-seeking students. Fine and performing arts programs offer cultural enrichment to the campus and the community. The teaching and learning environment fosters lifelong learning, an appreciation and respect for others, responsible citizenship, and career development.

Within the traditions of the arts, sciences, social sciences, and humanities, lies a history of imagination, inspiration and discovery by which faculty offer degree programs leading to post graduate work and careers in the public and private sectors. The School's resources support teaching by encouraging the teacher/scholar model in faculty, and by offering high quality support staff and services which assist students in identifying and meeting their educational goals.

The School responds to the educational needs of a diverse urban population with flexible scheduling, a curriculum meeting established academic standards of rigor, currency and application. The School also extends the college service mission through faculty research and study, student internships, partnerships, mutual grant projects, Centers, Institutes, and collaborations with public schools, business, industry, government, and non-profit organizations.

#### School of Professional Studies

The School of Professional Studies supports Metro State's primary objectives of teaching and learning through high quality education, incorporating the most current technologies, and preparing students for professional life. SPS both serves and is served by the greater metropolitan area by providing graduates who are knowledgeable in diverse disciplines and cultures. SPS provides the opportunity and facilities for life-long learning necessary for career advancement and change in a global society. With an urban focus, it seeks to integrate academic and professional experiences, using the community as a living laboratory with clinical and field placements.

#### **RELATION TO CAMPUS**

Metropolitan State College of Denver has important interdependent relationships with three other State of Colorado institutions- the Auraria Higher Education Center (AHEC), Community College of Denver, and the University of Colorado at Denver. AHEC hosts the three academic institutions on the downtown campus, acting as the facilities manager for all three institutions. Each institution has a unique mission and role in the State of Colorado Higher Education System and their service to the community. Regardless of their uniqueness however, they all have similar aspirations in promoting high quality academic programs and improving higher education in Colorado.

The unique partnership and the sharing of one physical campus, forces the institutions to pay particular attention to the use of their physical resources, especially the land and buildings in which they share and operate. Recently, the institutions collaborated on a concept to create a "neighborhood" for each institution on the campus. This resulted in a new campus master plan that promotes individuality and will eventually improve the identity for each school while still being able to share resources when necessary. The neighborhood concept allows each institution to pursue their own visions and aspirations and provide physical environments particular to their mission and programs.

The Auraria Campus uses its classrooms more often than any other campus in the country. The 151 acre campus has classrooms scattered throughout its facilities. These are shared by each institution and used an average of 50 hours per week. Although this plan primarily supports the Metropolitan State

College of Denver, the College will be developing additional classrooms for everyone's use as part of the improvements.

# **Growth Projections**

The 2007 Auraria Campus Master Plan predicted that the institutions would see enrollment increases of two percent per year. Generally, those numbers have held over the years however the current economic recession is seeing an increase above what as anticipated. Metro State saw an increase in enrollment of 5.5% in the last year. Metropolitan State College of Denver, as well as the Community College of Denver, has had an open enrollment policy until this past year. Because of the surge in enrollment growth, Metro State was forced to put a deadline on enrollments for the first time ever. This is due to the lack of space and the ability to support the increased number of applicants.

The University of Colorado at Denver is expecting to increase its undergraduate enrollments to between 14,000 and 16,000 students by the year 2020. This would nearly double their existing enrollments. Metro State's other partner, the Community College of Denver, is much like Metro State. Targets are driven by market demand and currently, enrollments are increasing at an alarming rate. It is mission driven that CCD is also a college of opportunity, fostering acceptance of application in most all cases. The diverse student body is dependent on classrooms more so than even Metro State and UCD.

Growth in student enrollments require additional faculty and staff to support campus programs. For Metropolitan State College of Denver, this is estimated to be an average of approximately 31%

# 6.0 Relation to Campus

across the three schools (Liberal Arts and Sciences, Professional Studies, and Business).

As part of the Auraria partnership, Metropolitan State College of Denver is planning on doing its part to help all three institutions address enrollment growths. The most critical space needed to address growth is in classrooms. MSCD not only plans to address their own space needs through the backfill improvements, but also plans on adding classroom space that can be shared with the Community College of Denver and the University of Colorado at Denver.

#### **ALTERNATIVES CONSIDERED**

The space available for the backfill project is defined primarily by the space that will be vacated by Metro programs and departments moving to the new Student Success Building, and those moving from temporary staging space in the Administration Building to the newly completed Science Building on campus.

The primary goals for the allocation of space in the backfill project are: to address the most critical deficiency and growth space needs of the groups in the study, to meet key adjacency requirements for each school and department, and to be relatively equitable in the assignment of available space to each school and department, and to minimize moves, disruption and remodel costs.

# **Classroom Space:**

All of the existing buildings in the study are somewhat limited in classroom capacity based on the number of existing restroom fixtures to serve the population for classroom space per code, and the exiting corridor widths required by code for classrooms. For the most part, where large classrooms exist in each building, they will be maintained. A very limited number of additional classrooms will be added in the buildings being backfilled as code and space allow.

One option available is to supplement the existing classroom inventory for the 1-5 year timeframe, is to create additional classrooms in the modular buildings that Metro has primary ownership of on campus. While ultimately the goal is to rid the campus of these modular buildings, this space could be considered until additional new construction on campus can provide a more

permanent classroom solution. This program plan does not include any modification to the modular units.

# **Administration Building:**

The Administration Building will have approximately 22,000 sf of available vacant space, once the science programs vacate. This space, due to its location and current configuration as predominately office space, is a good fit for the consolidation of the School of Business. The Administration Building was not considered a preferable location for the other Metro State Schools impacted by the backfill project, primarily due to its distance from the center of campus and their heavy classroom requirements. The building in its current configuration does not have the capacity to add any substantial classroom space due to the limiting factors for the expansion of the current exiting stairwell widths, and the fixed capacity of the restrooms.

Minor moves within the building can free up the entire 5th floor of the building for the School of Business department offices. It is the intent to maintain the two classroom spaces currently on that floor as classroom space.

The 4th floor will allow for some expansion of the Information Technology requirements with a modest expansion to the Data Center, and an increase in staff space. The Athletic Department would also move to this floor from the 5th floor to free up the entire 5th floor for the School of Business.

The 2nd floor will accommodate as much class, lab, and seminar space as the code will allow from the space vacated by Nursing and Art Communications who will be moving to the Central and West Buildings.

While the available space in the Administration Building does not fully accommodate the 1-5 year requests, the space accommodates the majority of the School's requests for the short term.

# West and Central Buildings:

Numerous scenarios were explored with respect to meeting the expansion and/or co-location requirements of the other Schools and departments in the study. The overarching concept was to focus the School of Letters, Arts and Sciences Departments in the Central Building, and the School of Professional Studies Departments in the West Building.

In the pure application of the above concept, it was determined that the School of Letters, Arts and Sciences (LAS) would be accommodated relatively easily in the Central Building while the School of Professional Studies (SPS) would not have nearly what it required for the 1-5 year timeframe in the West Building, thus, a more egalitarian option was suggested for the two schools within the two buildings.

While attempting to maintain the general concept of each school having a "building" to identify with, a couple of groups were maneuvered between the two buildings to more equally distribute the deficiency in space. In the final version the Technical Communications group from (SPS) was located in the Central Building as well as a couple of the Academic Affairs groups. Again, a majority of the requests are being accommodated, however, not all of the requests can be taken care of due to the limited existing building capacity.

# BUILDING DESCRIPTIONS Administration Building

#### A. Site:

- The Administration Building is located in the southwest quadrant of the Auraria Higher Education Campus, generally near the intersection of Lawrence Way and 7th Street in Denver, Colorado.
- 2. The topography of the site is generally flat, with a gentle slope downward to the north. The first floor building entrances are at street level. The main entrance is on the south side, adjacent to a light rail station. A secondary public entrance is on the northeast corner of the building and a service entrance is on the northwest corner of the building.
- 3. The site features a typical campus streetscape, sidewalks and mature landscaping.
- B. General Building Description:
  - The building, constructed in 1999, is five stories in height and contains a total of 126,772 gross square feet. It was designed primarily for classroom and lounge/study usage on the first floor, with general office functions accommodated on the second through the fifth floors. However, minor classroom and conference spaces do currently occur on some of the upper floors as well.

This building was designed to be an "open office" with significant use of systems furniture ("cubicles") versus hard wall offices. As such the mechanical, electrical and lighting systems were designed to support that. Remodeling

- to accommodate more hard wall spaces will require retrofit of these systems. The net assignable square feet is approximately 94,450 s.f.
- 2. The structure was constructed using structural steel frame and poured-in-place concrete floor. The structural system appears to be in generally good condition, with only minor shrinkage cracking on the concrete floors.
- The exterior of the building consists of brick spandrel panels, precast concrete trim and continuous aluminum storefront windows at the each floor. Doors and sidelights are dark colored anodized aluminum.
- 4. Interior walls are predominately painted drywall over metal studs.
- 5. Flooring generally consists of terrazzo in the lobby, and vinyl tile or carpet as applicable in other areas. Flooring base is four inch resilient cove base. Flooring in the building appears to be in relatively good condition considering the age of the building and heavy usage. Some areas are beginning to show wear.



# 8.0 Building Descriptions

- Ceilings in public areas and offices are suspended acoustical tile with exposed T-grid suspension system.
- Due to the buildings recent construction, it is thought that asbestos or other contaminates would not be present. However, an asbestos survey is required as well as environmental testing for lead / and any other possible hazardous materials.
- 8. Interior doors are naturally stained solid core wood. Door frames and sidelights are dark colored anodized aluminum. Neither the doors nor the frames bear the a fire label due to the fact that the building is equipped with an automatic fire sprinkler system and rated corridors are not required. Glass in the doors and sidelights is clear safety glass. Interior doors and frames at stairwells and elevator lobbies are rated.
- 9. The building is only 10 years old and the door hardware initially installed appears to comply with current codes and ADA standards.
- 10. The building is equipped with an automatic fire sprinkler system and fire alarm system.

# C. Building Exterior:

- The exterior of the building is comprised of dark red brick spandrel panels, buff colored precast concrete trim and continuous dark colored anodized aluminum windows. None of the exterior windows are operable for ventilation.
- 2. Glazing appears to be tinted double pane insulating glass.

 Building doors and sidelight entrances are dark colored anodized aluminum. Pushbutton actuated handicapped accessible devices are present at public entrances.

# D. Vertical Transportation:

 The building has two 3,500 lb. passenger elevators and one 4,500 lb. "freight" elevator that can be used by passengers. If any future classrooms are added only on the second floor, the current elevator capacity should be adequate for current loads.

#### E. Americans with Disabilities Act:

- The building is relatively new and is generally in compliance with the ADA. Exterior doors have push button actuated swing doors for disabled persons.
- 2. The public restrooms have fixtures, accessories, toilet partitions of the dimensional spacing required by ADA.
- 3. Interior doors have lever handled hardware on all openings.
- 4. Signage appears to comply with ADA requirements.
- 5. Elevators are available for access to upper floors.

#### **Central Classroom Building**

#### A. Site:

 The Central Classroom Building is located in the southeast quadrant of the Auraria Higher Education Campus, generally near the



intersection of Colfax Avenue and Speer Blvd. in Denver, Colorado.

- The building is sited adjacent to, as well as being connected at the Second Floor Level, to the West Classroom Building to the west.
- The topography of the site is generally flat, with a gentle slope downward to the north.
   The building entrances are at street level and provide accessible means of egress by campus sidewalks or ramps.
- 4. The site features a typical campus streetscape, sidewalks and mature landscaping.

#### B. General Building Description:

 The building, constructed in 1975, contains a total of 85,109 gross square feet, accommodating general classrooms and faculty offices. Portions of the buildings are two story in height on the northwest side and three stories in height on the east and south sides.

- The structure was constructed using pouredin-place concrete foundations, columns and floor and roof systems. The structural system appears to be in generally good condition, with no obvious signs of settling or cracking.
- The exterior of the building consists of brick spandrel panels and continuous windows at the first and second floors. Doors and sidelights and the three exterior entrances are constructed of painted hollow metal frames and doors.
- Interior walls are primarily painted drywall over metal studs. The walls, including corridor walls, only extend to the ceiling system.
- 5. Flooring generally consists of vinyl tile in classrooms and corridors, with carpet being utilized in office areas. Flooring base in public areas consists of four inch resilient base. Floors in the restrooms are poured epoxy with coved base. Flooring in the building appears to be in relatively good condition considering the age of the building and heavy usage. Some areas are beginning to show wear.
- 6. Ceilings throughout the building are outdated 20" x 60" suspended acoustical tile with exposed T-grid
- 7. It is likely that asbestos is present in this building. An asbestos survey, and testing for other possible hazardous materials, including lead, will be required for this building prior to any remodels.
- 8. Interior doors are plastic laminate clad solid core wood. Frames are hollow metal. Window

# 8.0 Building Descriptions

- lites in the doors are glazed with wire glass. Interior windows occur between the corridor and certain classrooms. They are wire glass in hollow metal frames.
- 9. Some of the classroom/corridor doors consist of a pair of doors, with the active leaf being 36" wide and the inactive leaf being 18" wide. The inactive leaf has top and bottom flush bolts.
- 10. Hardware on interior doors includes lever handled mortise locksets and closers at most classroom/corridor openings. Other doors in random locations do not have lever handles or closers. Sound seals and door bottoms have been installed on most classroom doors to control noise from the corridors.
- 11. The building is served by the central campus steam and chilled water systems for heating and cooling. It has an outdated fire alarm system and is not equipped with an automatic fire sprinkler system.

# C. Building Exterior:

- 1. The exterior of the building is comprised of dark red brick spandrel panels and continuous metal windows. Operable hopper vents are provided for manual ventilation.
- 2. The window system appears to be black anodized aluminum window components assembled in a continuous ribbon of windows. Glazing appears to be single pane glass with tinting film applied to the inside of the glass.
- 3. Building entrances are painted hollow metal doors and frames with wire glass. The entrances have handicapped accessible pushbutton devices for automatic opening.

### D. Vertical Transportation:

1. The Central Classroom Building has two passenger elevators which seems adequate to meet the needs of the building. Elevator vestibules are not required on building having three levels or less. Note: The elevators in this building also serve the needs of the West Classroom Building as described in the report for that building.

#### E. Americans with Disabilities Act:

- 1, The building is generally in compliance with the ADA, with certain exceptions. Accessible routes from the campus into the building are present at each entrance. Exterior doors have accessible push button actuated swing doors for the handicapped.
- 2. The public restrooms have fixtures, accessories, toilet partitions and most of the dimensional spacing required by ADA. However, the accessible stalls are only 48" wide and 66" deep.
- 3. Interior doors have lever handled hardware on most openings.

#### West Classroom Building

# A. Site:

- 1. The West Classroom Building is located in the southeast quadrant of the Auraria Higher Education Campus, generally near the intersection of Colfax Avenue and Speer Blvd. in Denver. Colorado.
- 2. The West Classroom Building is sited adjacent to, as well as being connected at the Second

- Floor Level, to the Central Classroom Building to the east and the Arts Classroom Building to the north.
- 3. The topography of the site is generally flat, with a gentle slope downward to the north. The first floor building entrances are at street level on the southeast corner and west sides of the building. There are two north entrances that occur under the bridge connection of the second floor that connects to the Arts Building, which are accessed by steps and an accessible ramp leading from the surrounding street and sidewalk level up to the First Floor level.
- 4. The site features a typical campus streetscape, sidewalks and mature landscaping.
- B. General Building Description:
  - The building, constructed in 1975, is two stories in height and contains a total of 86,573 gross square feet, accommodating general classrooms and faculty offices.



- The structure was constructed using pouredin-place concrete foundations, columns and floor and roof systems. The structural system appears to be in generally good condition, with no obvious signs of settling or cracking.
- 3. The exterior of the building consists of brick spandrel panels and continuous windows at the first and second floors. Doors and sidelights and the four exterior entrances are constructed of painted hollow metal frames and doors. Two of the entrances have motionactivated sliding doors apparently installed to facilitate easier movement in and out of the building.
- 4. Interior walls are primarily painted drywall over metal studs. Walls, including corridor walls, only extend to the ceiling system.
- Flooring generally consists of vinyl tile in classrooms and corridors, with carpet being utilized in office areas. Flooring base in public areas consists of four inch resilient base.
   Floors in the restrooms are poured epoxy with coved base
- Ceilings throughout the building are outdated 20" x 60" suspended acoustical tile with exposed T-grid.
- 7. It is likely that asbestos is present in this building. An asbestos survey, and testing for other possible hazardous materials, including lead, will be required for this building prior to any remodels.
- 8. Interior doors are plastic laminate clad solid core wood. Frames are hollow metal. Neither the doors nor the frames bear the code required 20 minute fire-resistive labels at most

# 8.0 Building Descriptions

- corridor openings. Window lites in the doors, are glazed with wire glass. Interior windows occur between the corridor and certain classrooms. They are wire glass in hollow metal frames.
- 9. Hardware on interior doors includes lever handled mortise locksets and closers at most classroom/corridor openings. Other doors in random locations do not have lever handles or closers. Sound seals and door bottoms have been installed on most classroom doors to control noise from the corridors.
- 10. The building is served by the central campus steam and chilled water systems for heating and cooling. It has an outdated fire alarm system and is not equipped with an automatic fire sprinkler system.

#### C. Building Exterior:

- The exterior of the building is comprised of dark red brick spandrel panels and continuous metal windows. Operable hopper vents are provided for manual ventilation.
- The window system appears to be black anodized aluminum window components assembled in a continuous ribbon of windows. Glazing appears to be single pane glass with tinting film applied to the inside of the glass, thus they are not very energy efficient.
- Building entrances are painted hollow metal doors and frames with wire glass. The west and northwest entrances have handicapped accessible pushbutton devices for automatic opening. The south and northeast entrances have motion-activated sliding doors.

# D. Vertical Transportation:

 The West Classroom Building does not have an elevator, which makes it difficult for a disabled person to readily move between classrooms on the first and second floors. One would have to exit the West Building, go to the adjacent Central Classroom or Arts Building, take the elevator to the second floor and cross over the bridge back into the West Building.

#### E. Americans with Disabilities Act:

- The building is generally in compliance with the ADA, with certain exceptions. Accessible routes from the campus into the building are present at each entrance. Exterior doors have either motion-activated sliding doors or push button actuated swing doors.
- The public restrooms have fixtures, accessories, toilet partitions and most of the dimensional spacing required by ADA. However, the accessible stalls are only 48" wide and 66" deep.
- 3. Interior doors have lever handled hardware on most openings.
- 4. The building does not have an elevator.

  Disabled persons wanting to go from the

  First Floor to the Second Floor must exit the

  building, travel to either one of the adjacent

  classroom buildings, go the Second Floor

  on the elevator in one those buildings and
  then cross over the bridge back into the West

  Building.

#### **HEALTH AND LIFE SAFETY ISSUES**

The following code related issues are those that are relevant to, or will need to be addressed as part of the remodels associated with the Backfill Project. Any code compliance issues that are related to the base building that are not impacted by this project are not addressed here. As a general rule IBC paragraph 3403.1 stipulates that additions or alterations to any existing building or structure shall comply with the requirements of the code for new construction. Conversely, portions of existing buildings not altered and not affected by the alteration are not required to comply with the requirements of the code for new construction.

# **Administration Building**

The building would originally have been designed and constructed under the 1997 Uniform Building Code. The 1997 UBC was the last code written by the International Conference of Building Officials (ICBO) prior to the advent of the development of the current model code known as the International Building Code (IBC). The 1997 UBC was very similar to the current IBC family of codes with respect to life safety issues. The following are the assumed Code classifications, applying the features of the existing building with the currently applicable 2006 IBC:

Occupancy: Group B (Educational occupancies

above the 12th grade)

Const. Type: Type I-ABldg. Area: UnlimitedBldg. Height: Unlimited

• Struct. Frame: 3 Hours (Concrete columns and

beams)

Floor/Ceiling: 2 Hours (Composite concrete

floors)

Roof/Ceiling: 2 Hours (Composite concrete roof)

• Ext. Walls 0 Hours (Setback - Table 602)

• Shaft Encl. 2 Hours

Partitions: 0 Hour (Interior non-load bearing)

• Corridors: 0 Hour

• Sprinklers: Bldg. is equipped with an automatic

sprinkler system.

#### Code Related Issues:

- Base on IBC Table 1017.1, corridor walls are not required to be fire rated due to the sprinkler system. While the materials used in the construction of the walls, that being metal studs and drywall, the actual fire rating of the walls would be considered as zero. Therefore, the corridor openings consisting of doors, frames and hardware need not be fire rated as well.
- 2. General classrooms currently occupy the east half of the first floor. The main corridor in that area is of the proper width to accommodate the occupant loads resulting from the number and size of the classrooms provided. That corridor leads to exits in the lobby and the northeast corner of the building.
- 3. Corridors on the second through the fifth floors are primarily 5' in width. The maximum occupant load a corridor of that width will accommodate is 400 at any given point (60" x 0.15" per occupant in sprinkled bldg.). One could assume a total occupant load of 800 by assuming 400 in one direction and 400 in the opposite direction, however, floors 3 through 5 only have two means of egress provided in the two existing stairwells. IBC Table 1019.1 restricts the total occupant load per floor or building area to 500 when only two exits are provided. Remodels to this building are not expected to impact restroom or occupant levels.

- 4. The two enclosed stairwells have treads that are only 48" wide. [Photo No. 29]. They will only accommodate 240 persons each (48" x 0.2" per occupant in a sprinkled bldg.). There is a single 36" wide door from the corridor into the stairwells that will also only accommodate 240 (36" x 0.15"). Therefore, the maximum occupant load on floors 3 through 5 is 480 persons.
- 5. It is recommended that any future classrooms added in the building be located on the first or second floor. The second floor has a third stair. that leads down to the first floor in the open, two story lobby. The presence of a third means of egress would allow the maximum occupant load on second floor to go up to 1,000, however, the total tread widths between the 3 stairs is 156", which limits the actual occupant load to 780. The third stair is relatively close to one of the enclosed stairwells but would still count as the third means of egress based on IBC paragraph 1015.2.2. If classrooms are added on this floor, the width of corridors leading to the three stairs may need to be increased to accommodate the additional occupant load created thereby.
- 6. The existing restrooms and the number of toilet fixtures appear to have been sized to only accommodate office occupant loads on the second through the fifth floors. If classrooms are added on any of those floors, restrooms will need to be enlarged or other restrooms added.
- 7. The building has exits are located on each floor so as to provide a travel distance, measured from the most remote point within each story, to be within the maximum distance of 300 feet in a sprinkled building.
- 8. The building appears to have adequate coverage of portable fire extinguishers.

- Extinguisher cabinets are located in the corridors.
- Elevator smoke vestibules are provided at floor levels two through five and are equipped with automatic closing doors that are held open by magnetic door devices connected to the fire alarm system.

# **Central Classroom Building**

The building would originally have been designed and constructed under the 1973 Uniform Building Code. Codes during that era were not as strict as the current International Building Code with respect to life safety issues. The following are the assumed Code classifications, applying the features of the existing building with the currently applicable 2006 IBC:

- Occupancy: Group B (Educational occupancies above the 12th grade)
- Const. Type: Type I-A
  Bldg. Area: Unlimited
  Bldg. Height: Unlimited
- Struct. Frame: 3 Hours (Concrete columns and beams)
- Floor/Ceiling: 2 Hours (Composite concrete floors)
- Roof/Ceiling: 2 Hours (Composite concrete roof)
- Ext. Walls 0 Hours (Setback Table 602)
- Shaft Encl. 2 Hours (Bldg. does not comply
  - See Issues below)
- Partitions: 0 Hour (Interior non-load bearing)
- Corridors: 1 Hour (Bldg. might not comply
  - See Issues below)
- Sprinklers: Bldg. is not equipped with an
  - automatic sprinkler system.

#### Code Related Issues:

- Interior walls on the first floor extend to the bottom of the second floor structure above, resulting from a previous renovation project several years ago. The second and third floors were not renovated at that time and remain as originally constructed in 1975. Similar to the West Classroom Building, the interior walls only extend to the non-rated suspended acoustical ceiling system, thereby creating a sound transmission problem between rooms, as well as not provide the code required one-hour firerated corridor wall and ceiling envelope as a protected means of egress.
- 2. Should the code reviewing agency determine that basic egress and life safety components must be upgraded, the issue of fire rated corridors must be addressed. To establish the required egress envelope, existing corridor walls on the second and third floors must be extended to the floor or roof structure above. Further, existing door and frames occurring in corridor walls on those floors do not bear the required U.L. labels. Doors, frames and hardware will have to be replaced with new rated assemblies. Any penetrations through the corridor walls, such as pipes, ducts, etc. would have to be fire dampered and/or fire caulked.
- 3. The Central Classroom Building is connected at the second floor to the West Classroom Building to the west. The West Classroom Building is then connected to the Arts Classroom Building to the north. Fire separation walls and rated fire doors are not provided between the three buildings to isolate fire migration and/or smoke infiltration between the buildings. Thus, for

- code classification, the three buildings would be considered one large building. As noted in the Code Analysis above, the total allowable area for a Group B, Type I-A building is unlimited. Therefore, fire separation walls are not required between buildings. However, if improvements are implemented for corridor walls/openings and/or sprinklers in West and Central and not in the Arts Building, a separation wall should be installed across the entire north end of West as described in the West Classroom Building report.
- 4. The corridor widths appear to be adequate for the anticipated occupant loads. Corridors on the second and third floor are 9' wide. A corridor that is 9' wide will accommodate 540 persons in an un-sprinkled building at the rate of 0.2" per occupant per IBC Table 1005.1. Corridors on the first floor are much wider.
- 5. The current total width of exterior door openings at the first floor is 360", which is equal to 1,800 occupant load and will more than accommodate the maximum total of 1,000 persons allowed due to only having three exit locations at the first floor. The total exit width of doors into the stairwells on the second and third floors is 144" which will accommodate at total of 720 persons per floor.
- 6. The total number of toilet fixtures does not appear to meet the required fixture counts outlined in Table 2902.1 for Group B occupancies. Even using the less restrictive category of Group E (Education), the existing fixture counts fall short. As an example, there are only four water closets in the women's restroom on the second floor, which would

accommodate only 150 at the rate of 25 persons per closet for the first 50 and then 50 persons per closet above that. If classrooms are added on this floor, and possible others, the population increase may dictate additional fixtures. A complete review of fixture counts should be conducted to determine if capacities need to increase based on anticipated occupant loads. The current assumption is that the Backfill project will not impact occupancy and therefore restroom upgrades are not considered part of the scope of this project.

7. Any of the current signage that does not comply with ADA standards within a room or suite will need to be upgraded if the space is being remodeled as part of this project.

# **West Classroom Building**

The building would originally have been designed and constructed under the 1973 Uniform Building Code. Codes during that era were not as strict as the current International Building Code with respect to life safety issues. The following are the assumed Code classifications, applying the features of the existing building with the currently applicable 2006 IBC:

• Group B (Educational occupancies above the 12th grade)

• Const. Type: Type I-A

Bldg. Area: Unlimited

• Bldg. Height: Unlimited

• Struct. Frame: 3 Hours (Concrete columns and

beams)

• Floor/Ceiling: 2 Hours (Composite concrete floors)

Roof/Ceiling: 2 Hours (Composite concrete roof)

• Ext. Walls 0 Hours (Setback - Table 602)

• Shaft Encl. 2 Hours (Bldg. does not comply

See Issues below)

Partitions: 0 Hour (Interior non-load bearing)

Corridors: 1 Hour (Bldg. might not comply

See Issues below)

• Sprinklers: Bldg. is not equipped with an

automatic sprinkler system.

#### Code Related Issues:

- 1. Interior walls only extend to the non-rated suspended acoustical ceiling system throughout the building. This poses a sound transmission problem between rooms, as well as the condition does not provide one-hour required fire-rated corridor walls and ceiling envelope as a protected means of egress.
- 2. As a general rule IBC paragraph 3403.1 stipulates that additions or alterations to any existing building or structure shall comply with the requirements of the code for new construction. Conversely, portions of existing buildings not altered and not affected by the alteration are not required to comply with the requirements of the code for new construction.
- 3. Should the code reviewing agency determine that basic egress and life safety components must be upgraded, the issue of fire rated corridors must be addressed. To establish the required egress envelope, existing corridor walls

must be extended to the floor or roof above. Further, existing door and frames in the corridor walls do not bear the required U.L. labels to confirm their fire-rated capabilities. Doors, frames and hardware will have to be replaced with new rated assemblies. Any penetrations through the corridor walls, such as pipes, ducts, etc. would have to be fire dampered and/or fire caulked.

- 4. The West Classroom Building is connected at the second floor to the Central Classroom Building to the east and the Arts Classroom Building to the north. Fire separation walls and rated fire doors are not provided between the three buildings to isolate fire migration and/or smoke infiltration between the buildings. Thus, for code classification, the three buildings would be considered one large building. As noted in the Code Analysis above, the total allowable area for a Group B, Type I-A building is unlimited. Therefore, fire separation walls are not required between buildings. However, if improvements are implemented for corridor walls/openings and/or sprinklers in West and Central and not in the Arts Building, a separation wall should be installed across the entire north end of West at the second floor level. The existing wall and doors presently located at the north end of the West corridors are not fire rated. They should be replaced with rated fire doors, with closers and magnetic hold-open devices, to provide a horizontal exit at the north end of the West corridors that lead into the Arts Building.
- Some of the current signage does not comply with ADA standards. Signage that does not comply within any room or suite will be updated to campus standards that are consistent with ADA requirements.

#### **EXISTING BUILDING DEFICIENCIES**

The following is a summary of existing building deficiencies primarily related to the areas being studied in this plan. They have been identified for the overall building architectural, mechanical, electrical, plumbing and IT systems. It should be noted that this information has been used to inform the cost estimates for the remodel of the specific areas within the buildings that will be impacted by the backfill project. However, those deficiencies that are base building issues, such as upgrades needed to overall building HVAC systems, electrical infrastructure, or restroom plumbing, will not be addressed as part of the backfill project.

# **Administration Building**

# Architectural Systems

Since the building was constructed in 1999 and is barely 10 years old, most architectural systems are in relatively good shape. Minor finishes such as paint and carpet need repair and will be during any relocation of personnel and program, or any renovation.

#### Mechanical Systems

 This building is predominately office space with a few computer labs and data rooms throughout. As such, the mechanical system is not designed for the higher ventilation air flow requirements of classrooms. Preliminary calculations have found that the current ventilation air is at 0.14 CFM/SF. Office spaces require 0.14 CFM/SF of ventilation and classrooms require approximately 0.75 CFM/SF. This means for every 1 SF of classroom added, approximately 5.4 SF of office space would have to be removed. (note: This is a general calculation for planning purposes. It assumes all floors are only classrooms or office spaces. It does not take into account other spaces such as storage, corridors, server rooms, etc. that may require less CFM/SF. Since the existing system is tapped out, limited conversion of office space to classrooms space may be possible but will have to be evaluated further in the design process.)

#### Electrical

- 1. The existing electrical system is original and in relatively good shape.
- 2. The electrical capacity is approximately 26 watts/SF with a breakdown of 5.5 watts/SF for general power, 9 watts/SF for lighting, 1 watt/ SF for miscellaneous use, and 10.5 watts/SF for mechanical hoods. The overall electrical capacity for this building is more than adequate for office and classrooms spaces.
- 3. The existing lighting system including emergency egress lighting is adequate and in good shape. The emergency egress lighting has battery back-up. There may be some need to provide more energy efficient lighting in renovated areas to meet current International Electrical Conservation Codes (IECC).
- 4. There is an existing generator that provides backup power for campus police/security functions but is not utilized for life safety.

#### Communications

1. The infrastructure that serves the Administration Building is a mix of cable categories ranging from Cat 3 to Cat 6 depending on when it was installed. Although the majority of the installed

Cat 3 cable is used for telephone service (voice), there are some instances where Cat 3 is still in use for data. Current AHEC cabling standards are based on Category 6 cable and components for both data and voice. While the majority of the installed data cable serving the buildings where backfill activities will take place is at least Category 5, which means it is 10-15 years old, in those cases where Cat 3 is still in use for data the cable plant most likely is 20 years or older. Although the Cat 5 cable is still serviceable and capable of supporting Ethernet workstations at speeds up to 100 Mbit, workstations may suffer degraded throughput at higher data rates like 1000 mbit (Gigabit Ethernet). Workstations connected with Category 3 cable are limited to 10 Mbit and cannot be upgraded to higher data rates such as 100 Mbit or 1000 Mbit due to cable and component limitations. With this in mind we recommend, as a general rule, if an area is undergoing moderate to extensive remodel or if a telecommunications outlet is to be relocated, that all associated cable and jacks be upgraded to Category 6 to bring the outlet up to AHEC standards. (The full Communications Assessment Report is included in the Appendix.)

- 2. Telecom rooms in the building are of good size and require little upgrade for renovation purposes. With the exception of the fourth floor, there is ample room for adding new patch panels in the equipment racks.
- The MSCD Data center is located on the fourth floor of the Administration Building. This should be expanded with the renovation so that two more rows of equipment cabinets can be added.

# **Central Classroom Building**

# Architectural Systems

- The Interior walls only extend to the ceiling system. This condition poses a sound transmission problem between rooms, as well as a building code and life safety problems. Where appropriate walls should be extended to the floor deck above.
- 2. Ceilings throughout the building are outdated 20" x 60" suspended acoustical tile with exposed T-grid. The tiles are generally dirty and a few are stained, cracked or broken. Replacement tiles and grid components are reportedly difficult to obtain. Existing and/or future light fixtures and HVAC diffusers must be compatible with the unusual size of grid pattern. A new suspended ceiling system is recommended within the remodeled areas.
- Due to the age of the building, the flooring, ceiling tiles, drywall compounds, paint and other building materials may contain asbestos or other contaminates. An environmental study is required to determine the presence of same. Remediation would be required prior to any renovation efforts.
- Non-compliant door hardware and signage in any of the areas affected by the Backfill will be brought up to code and ADA standards.
- 6. The window system reportedly leaks water and air. Operable windows in a public building also make it difficult for the HVAC system to function properly. Glazing appears to be single pane glass with tinting film applied to the inside of the glass, thus they are not very energy efficient.

# Mechanical Systems

1. Capacity information is not yet available for the existing HVAC systems, however some estimations were calculated based on common industry practices. The current building supply air was estimated at 1.14 CFM/SF which is little below typically expected values which are between 1.2-1.5 CFM/SF. The ventilation air flow for the building was also estimated at 0.34 CFM/CF. Since the building is mostly office space, there may be reserve ventilation capacity available in the classrooms. Cooling capacity may not be available for added classrooms with the reduced capacity due to freezing. Adding computer labs will also require supplemental systems to handle the added cooling load.

# **Electrical Systems**

- The existing electrical distribution equipment is original to the building and is past its useful life. In addition, the existing switchboard appears to not have adequate labeling for its short circuit rating and may present a problem if the switchboard is modified due to any renovations.
- 2. The existing feeder conductors for this building are aluminum and are past their useful life. Any new feeders and branch circuits installed as part of a renovation should be copper.
- 3. The building's electrical capacity is approximately 10 watts/SF with a breakdown of 3.5 watts/SF for general power, 3.2 watts/SF for lighting and 3.3 watts/SF for mechanical loads. The overall electrical capacity for this building is probably adequate for office space and classrooms not wired for computers. The electrical distribution would have to be modified

- by adding more step-down transformers and branch circuit panelboards to accommodate any renovation.
- 4. A transformer located on the first floor is nearing the end of its life. Any electrical upgrades in the building may require this equipment to be replaced.
- 5. The existing lighting system utilizes a modular wiring system that may not meet current National Electrical Code. In addition, the majority of existing lighting fixtures are 20"x60" to match existing ceiling tiles and would need to be replaced in areas where ceilings are replaced. Another concern about the existing lighting system is whether it would meet IECC. Most likely, it would not and any areas renovated will have to be updated with new energy efficient lighting.

#### Communications

- The infrastructure that serves the Central Building is a mix of cable categories ranging from Cat 3 to Cat 6 depending on when it was installed. The majority of the cabling is Cat 3.
  - On the first floor cabling is a mix of Cat 5-e and Cat 6. In areas of minimal remodel the existing cabling could be reused. Areas of extensive remodel should be recabled with Cat 6.
  - On the second floor the majority of the cabling is Cat 5. It is recommended that all areas of remodel, minimal to extensive, be upgraded to Cat 6. Ideally the telecommunications room shoud be enlarged on this floor. This room has reached capacity and equipment cannot be accessed in the cramped space.

The telecommunications room on the third floor has heat load issues. Two options are being considered: relocate this TR and replace all cabling on the floor to Cat 6 rather than trying to move the cabling or expand the room and also replace all cabling on the floor.

# **West Classroom Building**

# Architectural Systems

- The Interior walls only extend to the ceiling system. This condition poses a sound transmission problem between rooms, as well as a building code and life safety problems. Where appropriate walls should be extended to the floor deck above
- Due to the age of the building, the flooring, ceiling tiles, drywall compounds, paint and other building materials may contain asbestos or other contaminates. An environmental study is required to determine the presence of same. Remediation would be required prior to any renovation efforts.
- 3. Ceilings throughout the building are outdated 20" x 60" suspended acoustical tile with exposed T-grid. The tiles are generally dirty and a few are stained, cracked or broken. Replacement tiles and grid components are reportedly difficult to obtain. Existing and/or future light fixtures and HVAC diffusers must be compatible with the unusual size of grid pattern. A new suspended ceiling system is recommended in areas that will be remodeled.
- Non-compliant door hardware and signage in any of the areas affected by the Backfill will be brought up to code and ADA standards.

# Mechanical Systems

1. Capacity information is not yet available for the existing HVAC systems, however some estimations were calculated based on common industry practices. The current building supply air was estimated at 1.11 CFM/SF which is little below typically expected values which are between 1.2-1.5 CFM/SF. The ventilation air flow for the building was also estimated at 0.4 CFM/CF which is much too low to even support offices. Further information is needed to verify these values. It is not recommended at this time to convert offices to classrooms. Furthermore. it may be required to convert classrooms into office in order to meet code ventilation requirements. Adding computer labs will also require supplemental systems to handle the added cooling load.

# **Electrical Systems**

- The existing electrical distribution equipment is original to the building and is past its useful life. In addition, the existing switchboard appears to not have adequate labeling for its short circuit rating and may present a problem if the switchboard is modified due to any renovations.
- 2. The existing feeder conductors for this building are aluminum and are past their useful life. Any new feeders and branch circuits installed as part of a renovation should be copper.
- 3. The building's electrical capacity is approximately 11.5 watts/SF with a breakdown of 3.5 watts/SF for general power, 4.7 watts/SF for lighting and 3.3 watts/SF for mechanical loads. The overall electrical capacity for this

- building is probably adequate for office space and classrooms not wired for computers. The electrical distribution would have to be modified by adding more step-down transformers and branch circuit panelboards to accommodate any renovation.
- 4. The existing lighting system utilizes a modular wiring system that may not meet current National Electrical Code. In addition, the majority of existing lighting fixtures are 20"x60" to match existing ceiling tiles and would need to be replaced in areas where ceilings are replaced. Another concern about the existing lighting system is whether it would meet IECC. Most likely, it would not and any areas renovated will have to be updated with new energy efficient lighting.

#### Communications

- The infrastructure that serves the West Building is a mix of cable categories ranging from Cat 3 to Cat 6 depending on when it was installed. The cabling in the building is predominantly Cat 3. The Cat 5 is still serviceable, however many computers cannot take advantage of their faster connection speed without the Cat 6 upgrade. All areas of remodel should include upgrades to Cat 6 cabling.
- 2. The telecommunication room on the first floor is extremely constrained and the current layout of the room does not lend itself to easily upgrade cable as areas on the first floor are remodeled. This room also serves as the entrance facility for the building and connecting to the campus phone switch. A new location, more centrally located, is recommended for the voice and data, leaving the original room as the entrance hub to

- the building. A room approximately 120 square feet in size will accommodate the new cabling infrastructure.
- The telecommunication room on the second floor appears to be at capacity. Equipment cannot be accessed and space is cramped. This room should be expanded to access the current equipment properly as well as provide room for additional racks.

# General Issues for all Buildings

# Security Systems

Security systems consist of access control and video surveillance. The campus is moving from a card systems to proximity cards. Any areas being renovated which have existing swipe cards will be upgraded to the current standard. Access control will be required at all entrances into Department Office suites that are only occupied during working hours This includes offices, conference areas and select areas containing sensitive data. Telecommunication rooms should also have access control added to facilitate a record of access due to the use by multiple entities.

Video surveillance is used sparing throughout campus. It is anticipated this will not change much in the near future. Video surveillance would be limited to sensitive areas which have cash transactions or financial data. Break rooms, congregation areas, entries, alcoves may also warrant video surveillance.

#### Audiovisual

AHEC has established a standard for equipping classrooms. The "Smart Classroom" consists of projection system, document camera, sound

# 10.0 Existing Building Deficiencies

reinforcement and media systems. Seminar rooms will have limited technology in the form of projection system. If a room is designed to accommodate more than 30 persons, it should also have sound reinforcement for microphone or any media content played from a lap top network.

#### **PROJECT REQUIREMENTS**

This backfill project addresses pressures created both by the College's programmatic requirements and by facilities related issues that Metro faces in its Schools and primary building locations. By providing solutions for the programmatic needs, many of the facilities issues, such as code compliance and cabling upgrades, are inherently resolved as part of the remodels, moves and reconfigurations.

The project calls for the consolidation, expansion and/or reconfiguration of space to address both current deficiencies and some future growth through a five year timeframe for those Departments and programs described previously as part of the Backfill.

In order to accommodate the proposed changes and modifications, there will be three degrees of remodel completed in the Administration Building, and Central and West Classroom Buildings. The assumptions for the three levels of remodel are outlined in Table 1 on the following page.

# Planning Assumptions and Goals

There were a number of underlying assumptions that provided a framework for the development of this Program Plan. These are outlined below:

- Enrollment is projected to continue to grow for Metro, driving growth in all three Schools.
- There are significant deficiencies today, regardless of growth, that need to be addressed particularly in the areas of faculty office space and classroom/seminar space.

- At least five year projected space requirements need to be accommodated as it is assumed it will be some time before a second Metro building is constructed following the Student Success Building.
- Consolidation of each of the Schools in a primary location is a goal: School of Business (SCOB) in the Administration Building; Letters, Arts, & Sciences (LAS) in the Central Building; and Professional Studies (SPS) in the West Building.
- Reuse of existing space configurations with minimal remodel is a goal wherever possible.
- Leaving departments/programs in their existing location, and expanding in place wherever possible is a goal. Programs that are existing to remain in place will not necessarily be improved with new construction or upgrades.
- Adding classrooms to the campus is a mandate for Auraria as whole, with the ultimate goal of eliminating the modular units on site.
- Relocating the Health Professions Program from the Modular One unit is a priority. Converting this modular unit to additional short to mid-term use classroom space is a consideration to add more classroom space to the campus.

#### **Space Requirements**

In summary, Metro State currently has a total of 387 staff and faculty, not including adjunct staff. This number is projected to increase significantly in 1-5 years to approximately 524. This is a 35% growth in faculty/staff. These staff increases, addressing current deficiencies in space, and projected additional support spaces in the one to five year

# 11.0 Project Requirements

# TABLE 1

Minor Remodel	Moderate Remodel	Extensive Remodel A
Up to 25% remodel	Up to 50% remodel	(Assumes same use as current)
Same use as current	Same use as current	50-75% remodel
New carpet and paint	New carpet and paint	New ceiling grid and tile
Aesthetic upgrades	50% new ceiling tile and grid	New light fixtures
No mechanical/electrical or code upgrades	50% new light fixtures	Upgrade wall to go to structure to
No changes to cabling infrastructure	Move diffusers and return grilles	create fire rated corridors
unless a wall is moved or relocated	Move zone terminal boxes	New diffusers and return grilles
	Move thermostats	New branch ductwork
	Move sprinkler heads	Move and/or add zone terminal boxes and
	New lighting controls to meet code	thermostats
	New branch circuiting for new light fixtures	Add control points and F/S dampers at new
	and receptacles	rated corridors
	Relocations of life safety fixtures such as	Move sprinkler heads
	smoke detectors, fire alarm devices & exit	Address all MEP and ADA code compliance
	signs as needed per code	issues w/i impacted areas
	All cabling in the impacted areas will be	Test, balance and clean MEP systems
	replaced with CAT 6 jacks and cables	New lighting controls to meet code
		New branch circuiting for new light fixtures
		and receptacles
		Relocate or add life safety fixtures such as
		smoke detectors, fire alarm devices and
		exist signs as needed per code
		All cabling to be replaced & upgraded to CAT 6
		Expand telecommunications rooms in areas
		of extensive remodel to comply with current
		AHEC standards
Data Center Expansion		Extensive Remodel B
(specific to this space in Admin.Bldg only)		(Assumes change of use from current)
50-75% remodel		Same as above except:
New ceiling grid and tile		New zone terminal boxes, thermostats
New light fixtures		Increased ventilation requirements if changing
Demo ductwork and controls		space from office to classroom
Extend existing raised flooring		
Extend existing wall that blocks west		
facing windows into expansion space		
Create dedicated AC unit w/ humidification		
Add dry fire protection system		
Add control points		
Condensate piping to existing/new floor drain		
New lighting controls to meet code		
New branch circuiting for new light		
fixtures and receptacles		
Relocate or add life safety fixtures such as		
smoke detectors, fire alarms devices and		
exit signs as needed per code		
Add UPS and panelboard to Data Center		

timeframe drive the increases in square footages shown. Currently, the Departments and programs impacted by the backfill occupy approximately 106,105 assignable square feet. The projected five year need is estimated at 164,231 assignable square feet. This represents a projected increase in space needs of 58,126 asf, or a 55% increase over the space currently occupied for office, support, and dedicated class/lab spaces.

The breakdown by School of staff and space five year needs is outlined below:

- Letters, Arts and Sciences: 38% staff/faculty growth and 57% increase in space needs projected
- School of Business: 22% staff/faculty growth and 69% increase in space needs projected
- School of Professional Studies: 33% staff/faculty growth and 59% increase in space needs projected

Other Departments included in the space needs analysis include the Vice President-Information Technology Department, and Vice President – Academic Affairs Department which are smaller groups in terms of both staffing/faculty and space, but are included in the total space required.

The total space available to accommodate department current and projected needs equates to approximately 149,500 of square feet asf, not including classrooms. This breaks down to approximately:

- 49,974 asf in the Administration Building
- 55,013 asf in the Central Classroom Building
- 46,708 asf in the West Classroom Building
- 3,342 asf in the Arts Building
- 3,778 asf in Technology Building

(An additional 3,735 square feet will be remodeled on the fourth floor of the Administration Building to accommodate the Athletics department which will be moving from the fifth floor to make room for the school of business. The Athletics department is not included in the backfill program).

 (An additional 9,197 square feet will be remodeled on first floor of the King's Center for the Music Departments being relocated from the Arts Building. This department is not included in the backfill program).

These square foot totals per building include space already occupied by departments that are part of the program, and do not include space allotted to shared classrooms. The square foot available is not sufficient to meet all of the space needs identified, and is approximately 14,731 asf short of the projected 164,231 asf required in the five year time frame. See Table 2 on the next page for a breakdown of square foot numbers.

Currently, Metro State College primarily utilizes shared Auraria campus classrooms, scheduled and controlled by AHEC. Some of these are used predominately by Metro but with only a few exceptions these are not dedicated Metro classroom space. As part of this planning process, each School requested additional classroom space that ideally they would like to have dedicated to their instructional needs, or have primary use of. Because the issue of ownership remains a campus wide issue, rather than just a Metro State issue, these classroom requests were looked at separately from the Departmental programmatic space described above. A total of 43 additional classrooms were requested within the five year timeframe. Of that, this program calls for

# 11.0 Project Requirements

TABLE 2

Building	Space Vacated By	Space Being	Total Space To Be
	Moves to Science &	Remodeled	Occupied By Metro
	Student Success		in Backfill Project
	Bldgs.		ŕ
Administration	25,573	32,873	49,974
Central	37,486	53,644	55,013
West	11 900	20 214	46 709
vvesi	11,890	28,314	46,708
King		9,197	9,197
Art		3,342	3,342
		,	,
Tech		1,829	3,778
TOTALS	74,949	129,199	168,012
	thletics, & Math Lab (	not in program)	10,291
Total Programmed S	-		157,721
	quested (including clas	srooms)	
Total Classroom space			51,189
Total Non-Classroom	space deficiency		14,731

approximately 8,122 square feet of classroom space or 10 new classrooms to be created within the backfill areas, based on a realistic assessment of space available for instructional use. This falls significantly short of the space requested, but does provide a net increase in classroom space on campus, which is an important goal of this project. Additional new classroom space could also be created once the Health Professions Program moves out of the Modular One Building, however, that is not included in this program plan. A more detailed classroom utilization study may be warranted beyond the backfill project to address this issue.

The backfill plan strives to meet the most critical needs identified for the 5 year time frame with the understanding that not all requirements can be met

initially in the finite space available. The longer term requirements will need to continue to be assessed over time.

#### **Space Diagrams**

Test Fits were completed in the form of block plans that reflect proposed new locations of Departments, Departments which will remain in place, and Departments to remain and expand in place. These drawings also indicate the level of remodel required in each area, and the phase in which that work will take place. The drawings are shown on the following pages 59 though 70.

In an effort to create an identity for each building, an effort was made in the planning process to consolidate the School of Business in the Administration Building, the School of Letters Arts and Sciences in the Central Building, and the School of Professional Studies Departments in the West Building. While there is some overlap between West, Central and the Arts Building, this goal was met to the greatest degree possible. Critical adjacency requirements within each School also provided direction for the placement of the groups involved. A summary of the key moves and expansions per building and floor follows in Table 3. Table 4 (on page 58) provides a summary of the space needs program data.

TABLE 3

Building	Vacating	Moving In
Administration Building		
1 <sup>st</sup> Floor	CDC NILID Classes	CHARED CLASCODOMS (2)
	SPS-NUR Classrooms SPS-NUR	SHARED CLASSROOMS (2) SOB- DEDICATED CLASSROOMS
2 <sup>nd</sup> Floor	LAS-ART COM	SOB- DEDICATED CLASSROOMS
4 <sup>th</sup> Floor	VPAF-AC	PRESOF-ATH VPIT-USERS
5 <sup>th</sup> Floor	LAS- MATH PRESOF- ATH PRESOF-INAUD VPAF-BUDGT	SOB-DEANS SOB-ACC SOB-CIS SOB-ECO
	VPAF-BUB VPAF-HR VPAF-OIR VPAF-FPSM VPIA-FOUND VPIA-COCOM VPIA-DEVEL VPIA-INAD	SOB-FIN SOB-MGT SOB-MKT
Central Classroom		
1 <sup>st</sup> Floor	VPAA-AA VPAF-AC VPSS-REG VPSS-ADMIS VPSS-FINAD VPSS-SAS	SHARED CLASSROOMS (2) LAS-AAS LAS-SABS LAS-CAS SLH LAS-CAS-SPE COM LAS-JOUR SPS-T COM VPAA-INT. ST VPAA-CFD VPAA-HONORS
2 <sup>ND</sup> Floor	VPAA-VPAA	SHARED CLASSROOM (1)
2 11001	VPSS-ADMIS VPSS-REG LAS-CAS JOUR	EXPANSION OF: LAS-HIS LAS-SWK VPAA-ETC
3 <sup>RD</sup> Floor:	SOB-ACC SOB-ECO SOB-MKT PRESOF-FSN PRESOF-PRESI VPAA-VPAA VPAA-CFI VPSS-VPSS	SHARED CLASSROOMS (1) LAS-ENG LAS-DEAN LAS-PSC EXPANSION OF: VPIT
West Classroom		
1 <sup>st</sup> Floor	LAS-SABS-ANT VPAA-HONOR	SPS-ADMIN EXPANSION OF: SPS-TEED SPS-CJC
2 <sup>nd</sup> Floor	LAS-CAS-SPE SOB-CIS SOB-FIN SOB-MGT SOB-MKT SOB-ECO SOB-ACC SOB-SOB SOB-DEANS SPS-T COM	SHARED CLASSROOMS (4) SPS-HEPRO EXPANSION OF: SPS-HSP VPIT
Arts Building		
2 <sup>nd</sup> Floor:	LAS-MUS	LAS-ART COM
King Center		
4 <sup>th</sup> Floor:	LAS-PSC, LAS-ENG	LAS-MUS
Technology Building	SPS-TCOM	SPS-NUR
1 <sup>st</sup> Floor:	OI G-1 COIVI	SI S-NOIX

<sup>\*</sup> Note: Areas under consideration for space swaps that are not reflected on drawings include small areas on the 1st and 2nd floors of West, 2nd floor of Central and 4th floor of the Administration Building.

The following table summarizes the current and projected space needs by school and by department.

# TABLE 4

		Potential	Current	Current	Planning	1-5 Yea	r Req.	SF	SF
	School/Department	Location	Offices	SF	SF-Current	Staff	SF	Received	Shortage
LAS Letters Arts	and Sciences								
AAS	AFRICAN AMERICAN STUDIES	C1	6	1,844	1,508	10	2,142	1,955	187
ART	ART COMMUNICATION	Art	4	2,526	3,321	5	3,591	3,342	249
CAS/JOUR	JOURNALISM	C1	6	1,117	1,202	10	1,796	1,636	160
CAS/SLHS	SPEECH/LANGUAGE/HEARING	C1	5	967	1,040	7	2,457	1,843	614
CAS/SPE	SPEECH COMMUNICATION	C1	8	1,100	1,040	14	5,387	4,538	849
ENG	ENGLISH	C3	33	8,153	10,503	39	9,793	9,717	76
HIS	HISTORY	C2	29	4,553	4,752	33	6,453	6,068	385
INT	INTERNATIONAL STUDIES	C1	4	783	945	5	1,269	660	609
PHI	PHILOSOPHY	King 4	16	2,292	3,254	23	5,218	3,541	1,677
PSC	POLITICAL SCIENCE	C3	12	2,223	2,133	12	2,086	2,448	(362)
SABS	SOCIOLOGY/ANTRHOPOLOGY/BEHAV.SCI.	C1	16	3,173	2,763	19	3,902	2,844	1,058
SWK	SOCIAL WORK	C2	9	1,800	2,619	30	5,225	4,485	740
WMS	INST. WOMEN'S STUDIES	Alum?	-	-		-		-	-
LAS	LAS ADMIN & DEAN	C3	8	2,500	2,572	8	2,572	2,316	256
	School GSF Total		156	33,031	37,650	215	51,889	45,393	6,496

Comments

Theatre and Music departments receive space in the King Center that is outside the scope of this program but is noted on drawings and included in cost estimates. Women's Studies is included in the program but not currently part of the backfill plan. Space requirements are shown on detail department sheet.

		Potential	Current	Current	Planning	1-5 Yea	r Req.	SF	SF
	School/Department	Location	Offices	SF	SF-Current	Staff	SF	Received	Shortage
DB - School of	f Business								
ACC	ACCOUNTING	A5	15	2,549	2,403	21	4,037		
CIS	COMPUTER INFORMATION SYSTEMS	A4	17	3,473	2,727	18	5,191		
ECO	ECONOMICS	A5	9	1,673	1,485	13	2,795		
FIN	FINANCE	A5	9	1,581	1,485	10	1,971		
MGT	MANAGEMENT	A5	18	3,641	2,889	22	4,199		
MKT	MARKETING	A5	14	2,685	2,295	17	3,146		
SOB	SCHOOL OF BUSINESS ADMIN & DEAN	A2/A5	10	1,379	4,116	11	7,309		
	School GSF Total		92	16,981	17,400	112	28,646	26,501	2,1
mments: SF a	ssigned does not include possible assignment of	1st floor classroo	oms in the ad	min bldg.					

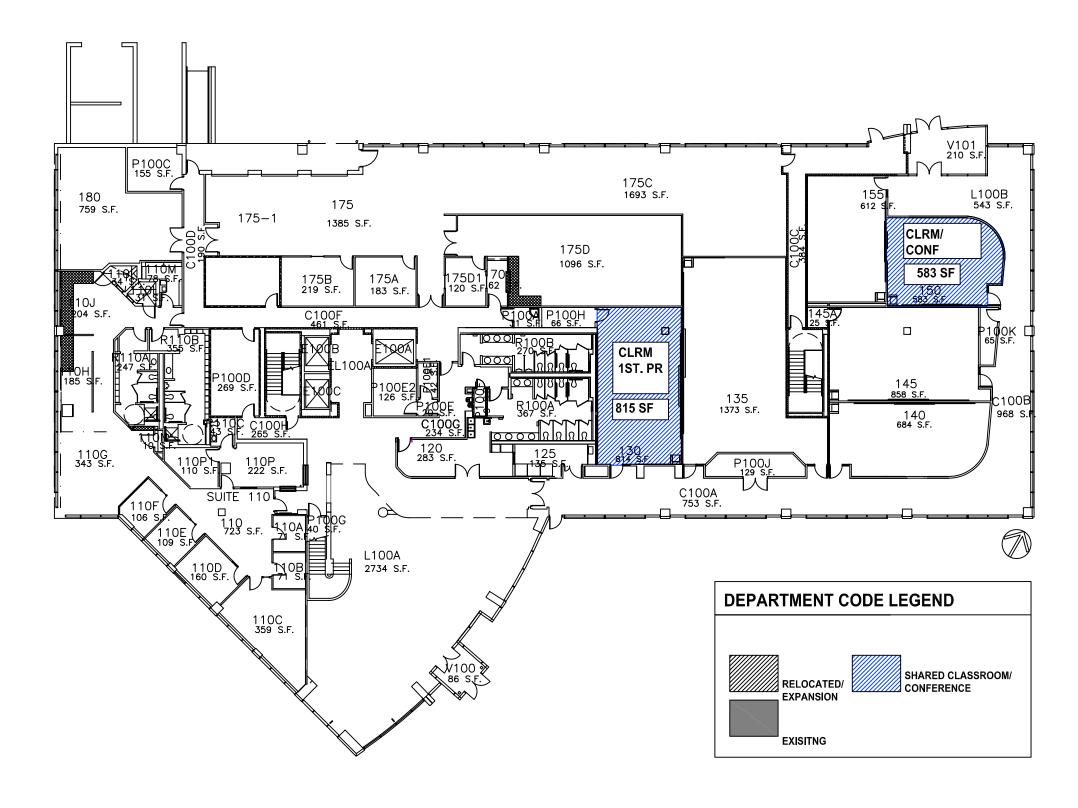
		Potential	Current	Current	Planning	1-5 Yea	r Req.	SF	SF
	School/Department	Location	Offices	SF	SF-Current	Staff	SF	Received	Shortage
SPS - School of Pro	ofessional Studies								
CJC	CRIMINAL JUSTICE	W1	13	2,801	3,530	20	5,299	4,176	1,123
СОМ	TECH COMM & MEDIA PRODUCTION	C1	8	1,913	3,618	10	5,319	5,229	90
HEPRO	HEALTH PROFESSIONS	W2	19	2,826	3,232	29	6,809	6,126	683
HSP	HUMAN SERVICES	W2	13	3,035	2,799	14	3,123	3,428	(305)
NUR	NURSING	W2, Tech	11	5,082	4,994	17	7,343	6,449	894
SERT-TEED	SPEC. ED, EARLY CHILD, READ & ED. TECH	W1/W2	19	ic. in TEED#	3,569	28	5,297		
ESLK-TEED	ELEM., SECOND., LIGUIST. DIV., K-12 ED.	W1/W2	21	ic. in TEED#	3,839	27	5,673		
TEED-ADMIN	TEACHER EDUCATION - ADMIN.	W1	10	11,089	2,365	10	3,279	15,076	(827)
ROTC	RESERVE OFFICER'S TRAINING CORP	1033 9th St.	0	0	0	0	0	0	0
SPS	SPS ADMIN & DEAN	W1	9	2,165	2,187	9	3,915	3,686	229
	School GSF Total		123	28,910	30,133	164	46,057	44,170	1,887
Comments	·								
ROTC is included i	n the program but not currently part of the backfill p	lan Snace red	uirements ar	e shown on d	etailed denart	ment sheet			

		Potential	Current	Current	Planning	1-5 Yea	ar Req.	SF	SF
	School/Department	Location	Offices	SF	SF-Current	Staff	SF	Received	Shortage
VPIT - Vice Presid	ent Information Technology								
VPIT	INFORMATION TECHNOLOGY	Adm./C2/W2	4	23,466	23,466	10	27,686	26,298	1,388
	(current sf from West and Central)								

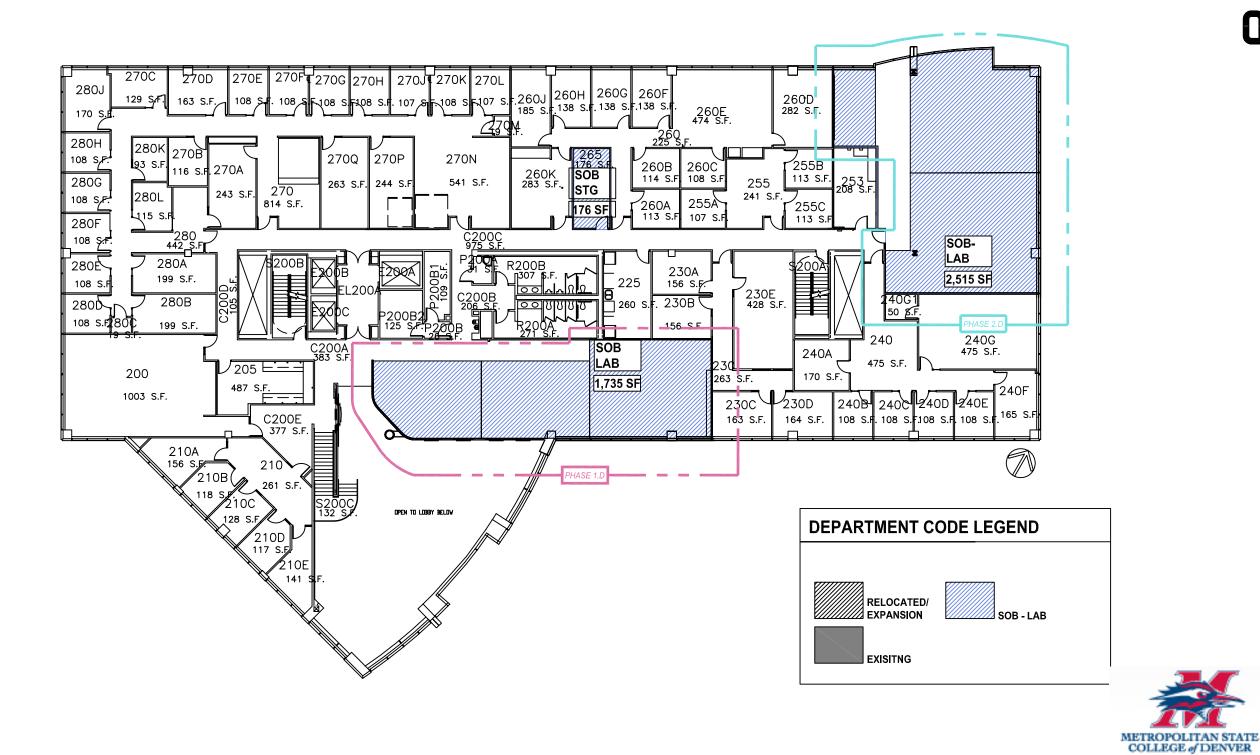
		Potential	Current	Current	Planning	1-5 Yea	r Req.	SF	SF
	School/Department	Location	Offices	SF	SF-Current	Staff	SF	Received	Shortage
VPAA	Vice President - Academic Affairs								
ETC	EDUCATION TECHNOLOGY CENTER	C2	8	2,633	3,698	14	4,979	3,181	1,798
HONOR	HONOR'S PROGRAM	C1	2	1,084			2,896	2,875	
CFD	CENTER FOR FACULTY DEVELOPMENT	C1	2	0	527	4	2,079	1,082	997
	School GSF Total		12	3,717	4,676	23	9,954	7,138	2,816

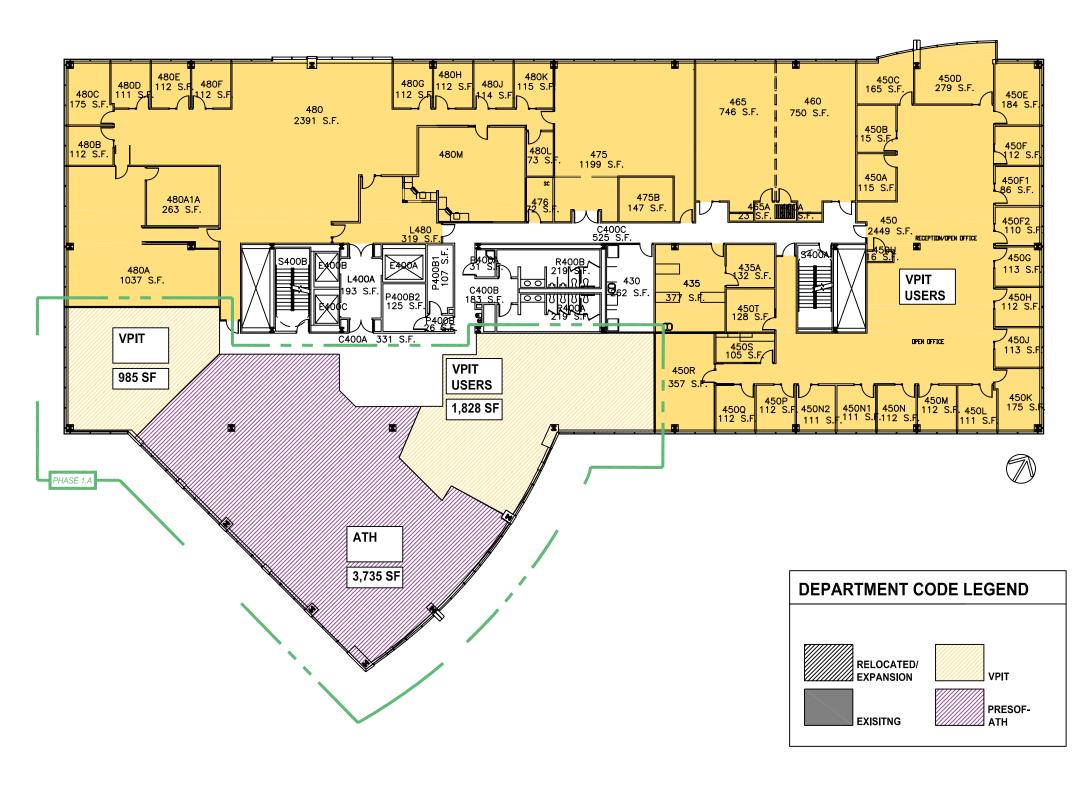
			Current	Planning	1-5 Yea	ar Req.	
	School/Department		# of Rooms	SF-Current	# of Rooms	SF	Shortage
Classroom	Classroom						
LAS	LETTTERS, ARTS & SCIENCES		0	0	17	25,320	
SOB	SCHOOL OF BUSINESS		0	0	9	23,220	
SPS	SCHOOL OF PROFESSIONAL STUDIES		0	0	12	10,870	
VPIT	INFORMATION TECHNOLOGY		0	0	2	1,620	
VPAA	VP ACADEMIC AFFAIRS		0	0	3	2,090	
	School GSF Total		0	0	43	59,410	51,189

	Current	Current	Planning	1-5 Yea	ır Req.	SF	SF
Total School/Department	Staff	SF	SF-Current	Staff	SF	Received	Shortage
TOTAL DEPARTMENTS	387	106,105	113,326	524	164,231	149,500	14,731
TOTAL CLASSROOMS				43	59,410	8,221	51,189
School GSF Total					223,641	157,721	65,920

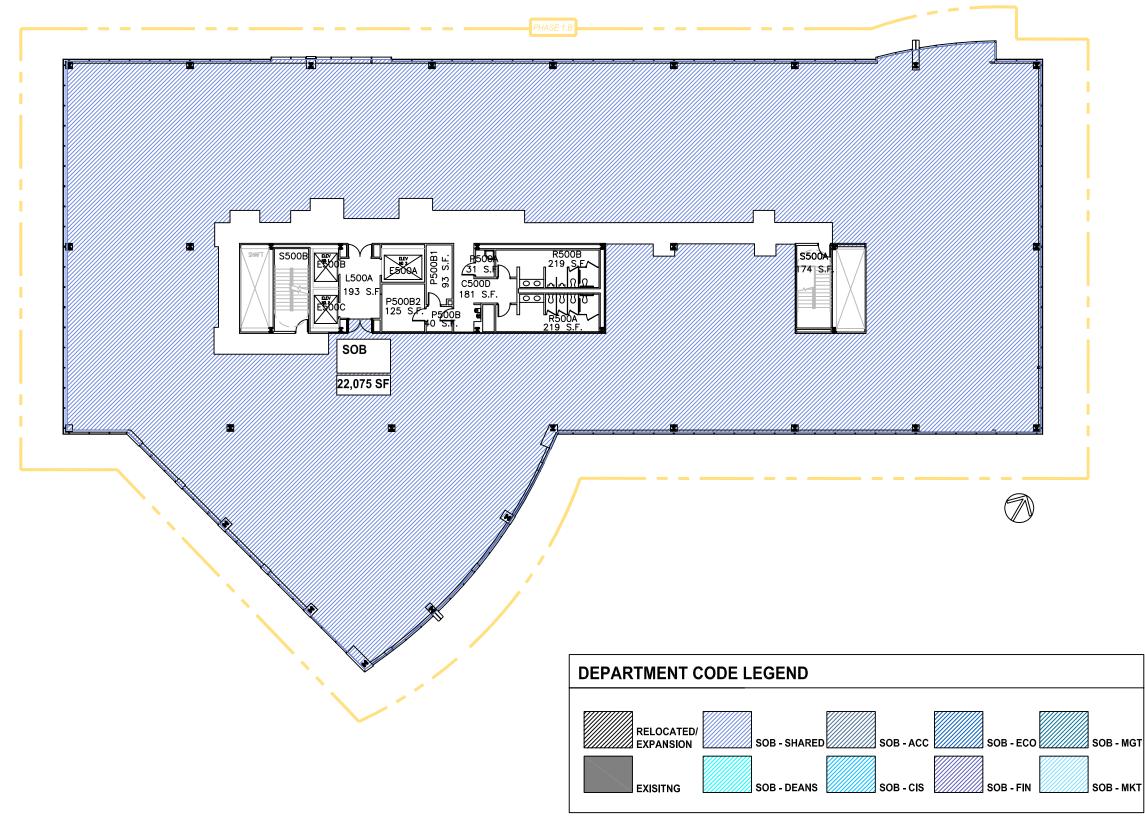




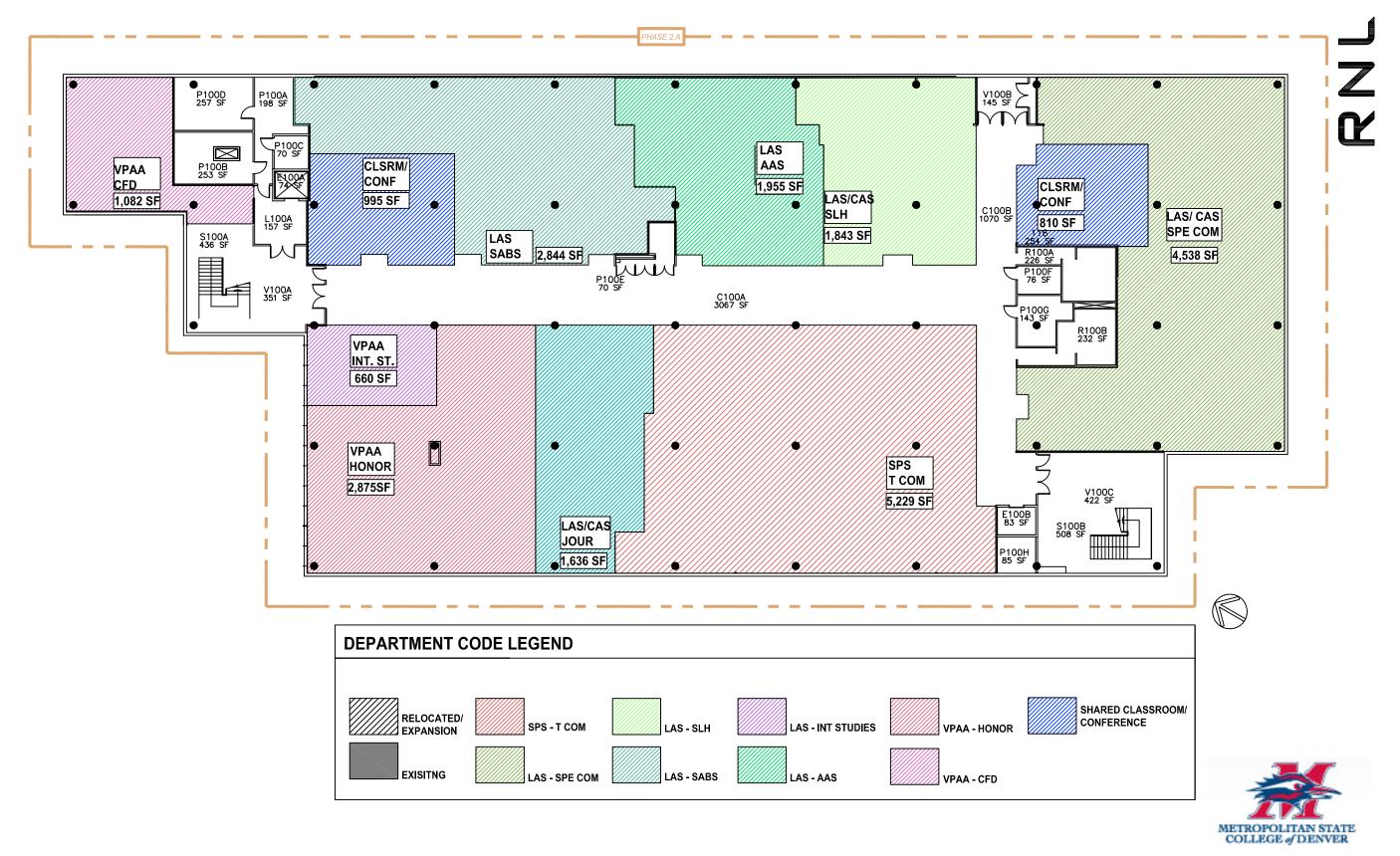




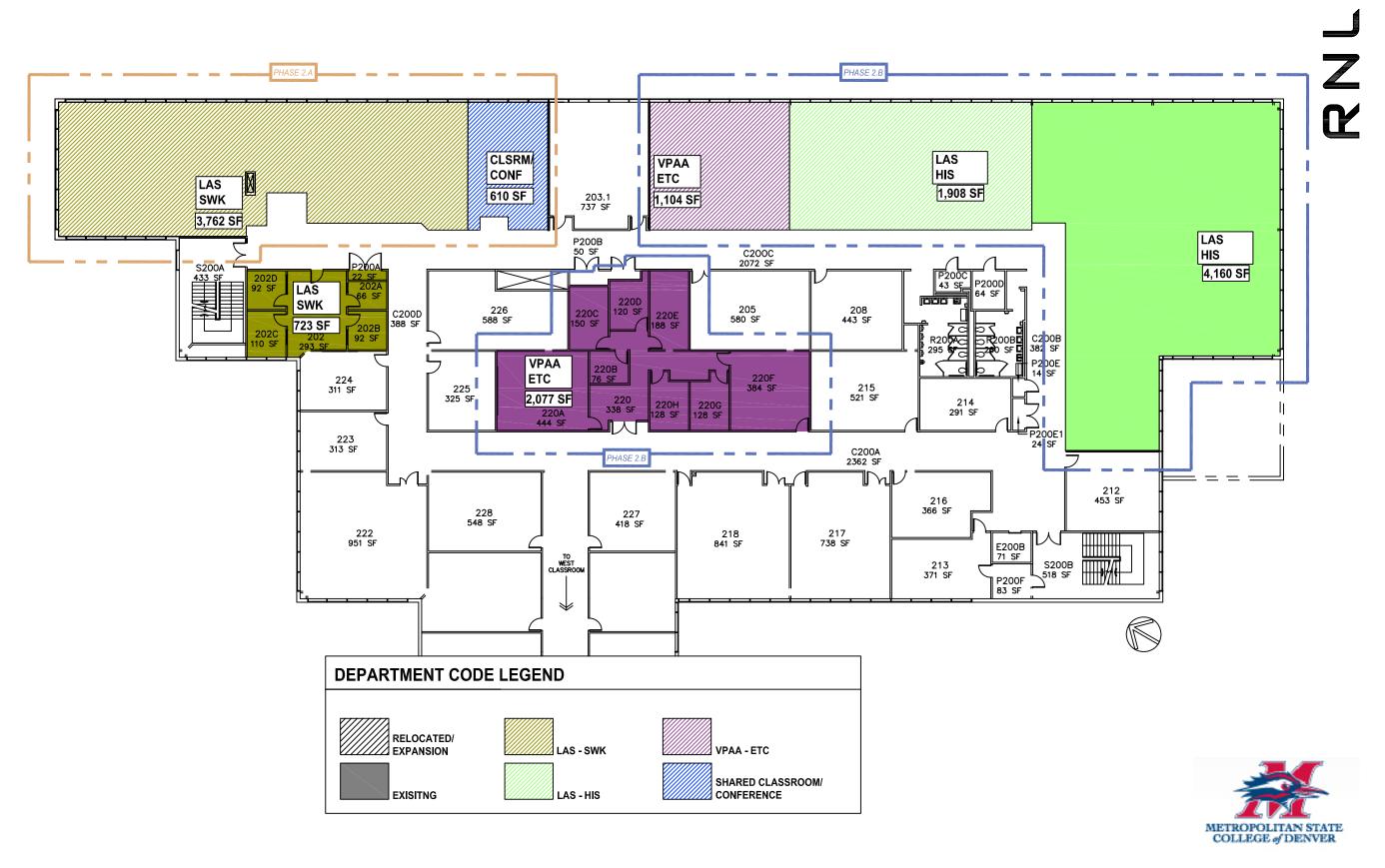




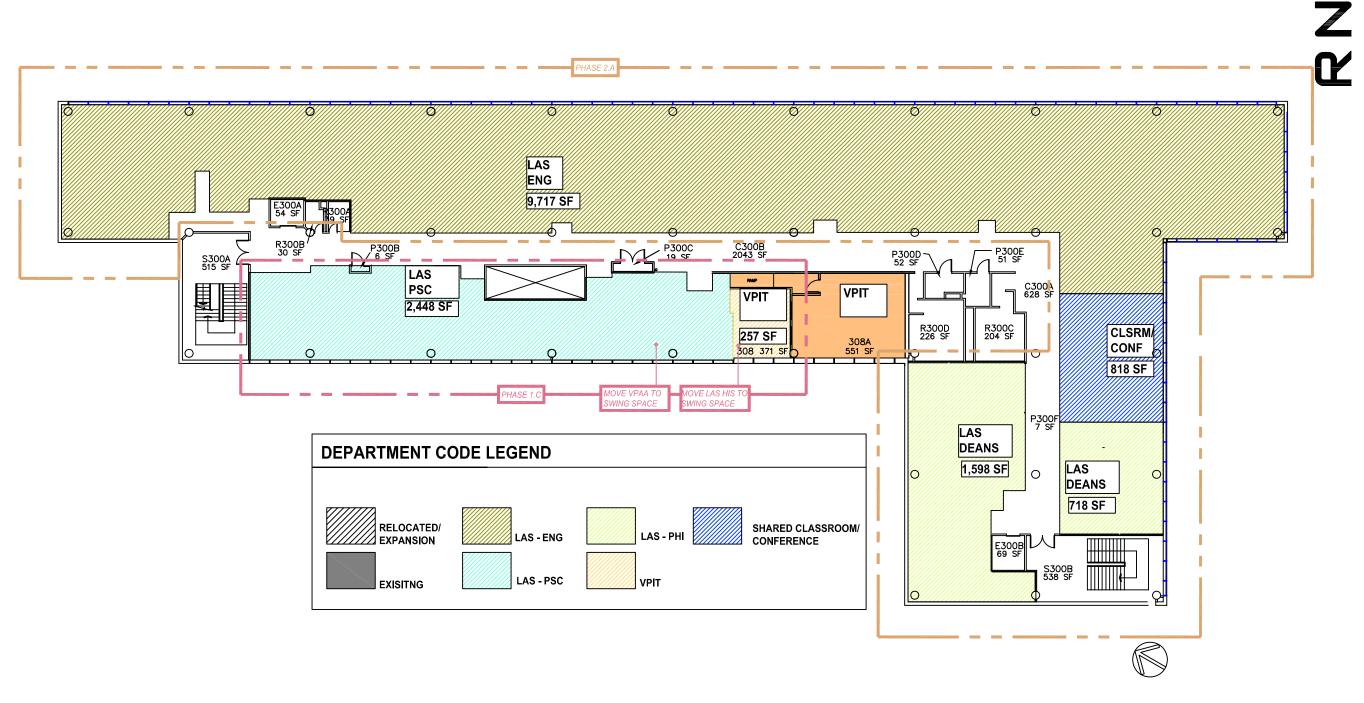




CENTRAL CLASSROOM BUILDING FLOOR 1



CENTRAL CLASSROOM BUILDING FLOOR 2





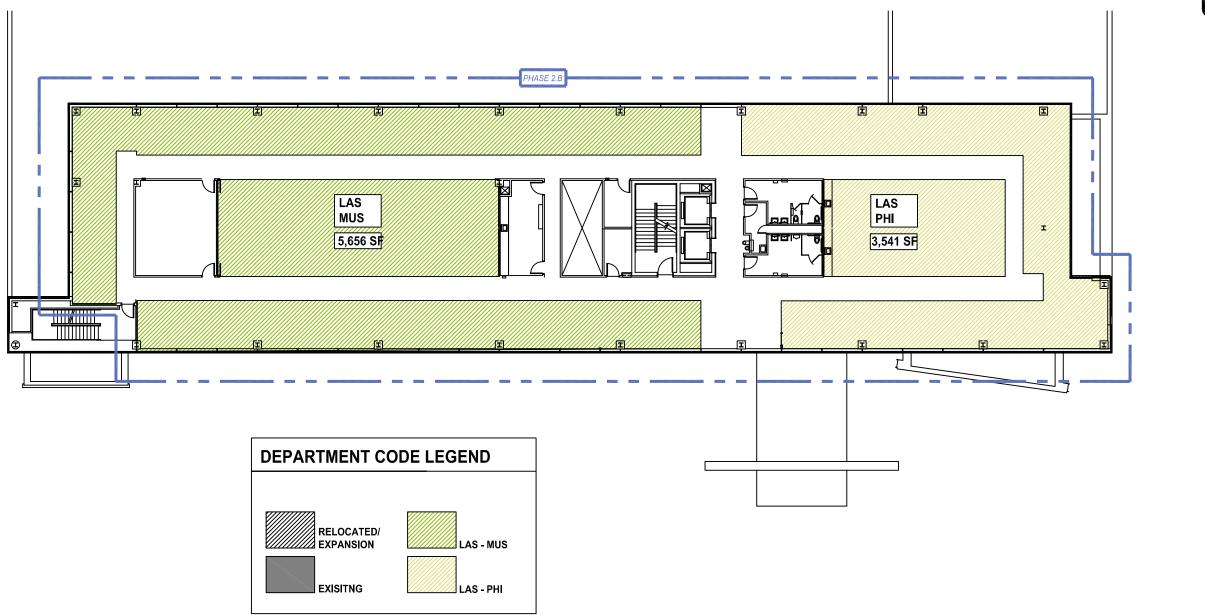
CENTRAL CLASSROOM BUILDING FLOOR 3



WEST CLASSROOM BUILDING FLOOR 1

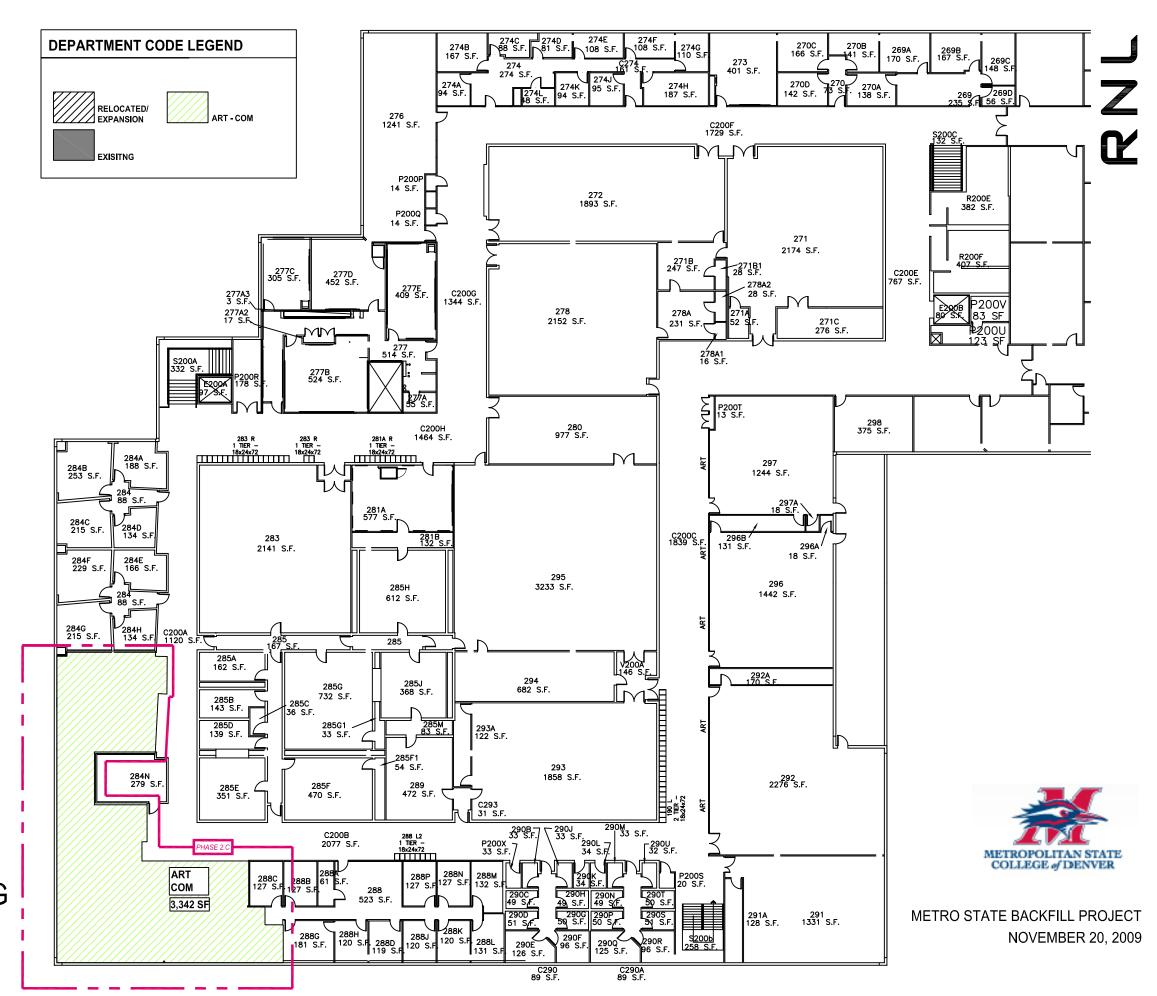


WEST CLASSROOM BUILDING FLOOR 2

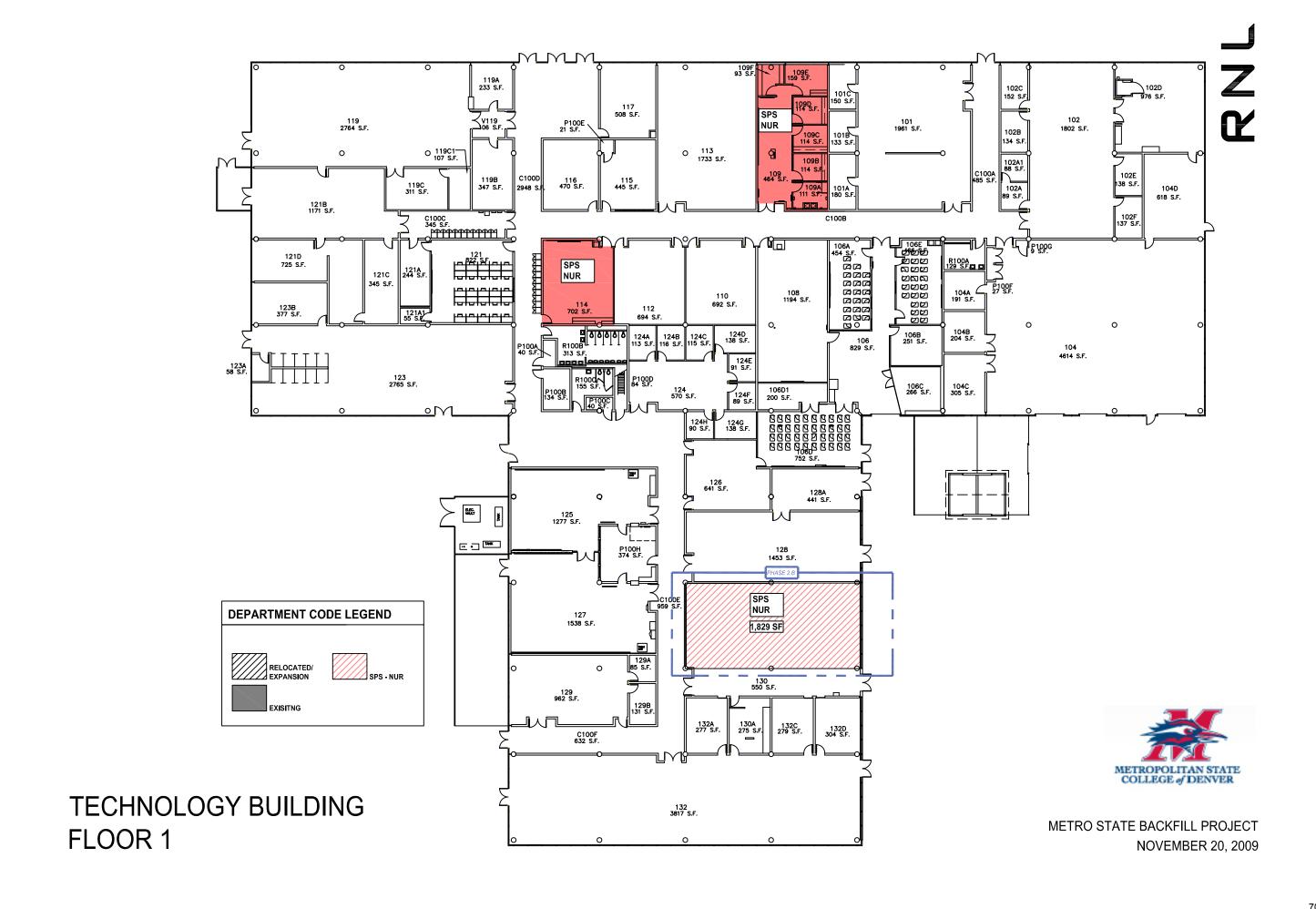




KING CENTER FLOOR 4



ARTS BUILDING FLOOR 2



#### PROJECT PHASING/SCHEDULE

There are two primary phases for implementation of the backfill. Phase One is the remodel of the Administration Building space for new occupancy by the School of Business, and continued occupancy by the Athletics Department and IT Department. This phase also includes the backfill of space vacated by the School of Business in the Central and West Buildings. Phase Two includes the remodels and moves associated with the Central, West, King Center and Arts Buildings that cannot occur until after the Student Success Building is completed and occupied.

These two primary phases each have multiple sub-phases that make up a critical path of moves and remodels. There are very few double moves required with the proposed phasing plan, and those that are necessary are for small groups for which it will be easier to find temporary staging space. Most of the groups who must relocate only have to move once.

Phases have been noted on the drawings shown in the Project Requirements section. A summary of the phasing is provided in Table 5. The table below shows each sub-phase within Phases 1 and 2, the groups that are involved in that phase, the building and floor location of the remodel work, and the total square footage impacted. There are a total of five sub-phases in Phase I, and four subphases in Phase 2. A total of approximately 44,493 sf will be remodeled as part of Phase I. A total of approximately 84,706 sf will be remodeled in Phase II. Of the total 129,199 sf being remodeled, 32,873 sf will be in the Administration Building, 53,644 sf in the Central Building, 28,314 sf in the West Building, 3,342 sf in the Arts Building, 9,197 sf in the King Building and 1,829 sf in the Tech Building. It should be noted that these square footages relate only to the space that will be remodeled, not to the total program requirements reflected in the space needs data.

# 12.0 Phasing

TABLE 5

I PHASE 1 & 2 (including prograi	n confirmatio	on) Start Jan	uary 2010 -	Complete +/-	-18 weeks				
1 Start January 2011 - Complete	+/- 39 weeks			Admin	Central	West	Art	King	Tech
Phase 1a	Bldg	Floor	SF						
Athletics	Admin.	4	6,548	6,548					
VPIT	Aumin.	4	0,540	0,540					
Phase 1b	Bldg	Floor	SF						
SCOB Departments	Admin.	5	22,075	22,075					
Phase 1c	Bldg	Floor	SF						
CDC Lie alth Das Niverian	10/	0	0.707			0.707			
SPS - Health Pro/Nursing LAS - Political Science/ VPIT	West Central	2	8,797 2,705		2,705	8,797			
Phase 1d	Bldg	Floor	SF						
SCOB Labs	Admin.	2	1,735	1,735					
Phase 1e	Bldg	Floor	SF						
Classroom/Lab LAS - Math Classroom/Lab	West West	2 2	2,633			2,633			
Fotal phase 1	West	_	44,493						
Start April 2012 - Complete +/-	63 weeks		,						
Phase 2a	Bldg	Floor	SF						
SPS - Tech Comm LAS - History, SABS, AAS, Int Studies	Central	1	24,467		24,467				
VPAA - Honors, CFD LAS - Social Work	Central	2	4,372		4,372				
LAS - English/Political Sciences	Central	3	12,851		12,851				
Classroom/Lab	Central	3							
Phase 2b	Bldg	Floor	SF						
SPS - Criminal Justice/TEED**	West	1	7,357			7,357			
SPS - Human Services**	West	2	3,428			3,428			l
LAS - History/VPAA-ETC LAS - Theatre/Music	Central	*2 4	9,249		9,249			9,197	l
SPS - Nursing	King Tech	1	9,197 1,829					9, 19/	
Phase 2c	Bldg	Floor	SF						
LAS - Art Comm	Art	2	3,342				3,342		
VPIT/ Classroom	West	2	2,413			2,413			
Phase 2d	Bldg	Floor	SF						
SCOB Classroom/Lab SPS -Admin./Dean	Admin. West	2	2,515 3,686	2,515		3,686			
Total phase 2			84,706						
Total back-fill square footage			129,199	32,873	53,644	28,314	3,342	9,197	ŕ

Note: Phasing timeframes do not include aesbestos abatement if required, as the extend of abatement is not known at this time.

\* ETC would like a minor remodel of their current office space

\*\* Existing space to be remodeled adjacent to new growth space

#### **COST ESTIMATE**

The cost estimates were based on the assessment of existing conditions, the drawings indicating areas and levels of remodel defined earlier in the document, and the phasing plan. A summary of the cost estimate is shown below. Cost estimate details are included in the Appendix.

	Total Area SF	Total Cost \$	Unit Cost \$/SF
Administration Building	32,873	1,718,212	52.27
West Classroom Bldg	28,315	1,693,299	59.80
Central Classroom Bldg	53,644	2,790,028	52.01
Art Building	3,342	174,056	52.08
King Building	9,197	341,466	37.13
Tech Building	<u>1,829</u>	<u>121,290</u>	<u>66.32</u>
TOTAL CONSTRUCTION COST	129,200	6,838,352	52.93

TOTAL PROJECT COST		
Construction Cost	6,838,352	
Investigation Reports	175,000	
AE Fees	451,500	
Consultants	100,000	
Construction Management	459,000	
TOTAL	8,023,852	
Equipment	400,000	
Furnishings	485,000	
Communications Digital/Optical	225,000	
TOTAL	9,133,852	
Art in Public Places (1% of	68,384	
construction cost)		
Relocation Cost	200,000	
TOTAL	9,402,236	
Program Contingency (10%)	<u>940,224</u>	
TOTAL ESTIMATED PROJECT COST	\$10,342,460	

NOTE: Cost estimates assume a total escalation rate of 4.59% for Phase I and 9.96% for Phase II. Asbestos removal is assumed in all areas of remodel. The necessity for this will be confirmed through asbestos testing that will occur at the beginning of 2010.

#### LEED CHECKLIST

The various levels of remodeling necessary in the backfill project are to be designed and constructed to meet the latest sustainable design criteria. As a guideline for sustainability practices, the LEED for Commercial Interiors Checklist has been included to summarize credits that should be considered where applicable. These will need to be reevaluated as the project progresses. Credits that are considered achievable or possibly achievable vary per building, as they are dependent on existing construction and the extent of the remodel necessary.

The base building in which construction is taking place affects which credits are applicable due

to existing mechanical and lighting systems and other equipment within the building. Because the scope of work in many of the areas is not extensive enough to require replacing existing base building systems, some of the prerequisites and credits of the categories will not be obtainable in all remodel areas. Many areas that require extensive construction will require upgrades to lighting and mechanical systems, and therefore may be eligible for more credits. All areas of remodel should be able to achieve credits under the Material and Resources category. The overall goal is to design and construct each area of remodel to the meet as many of the LEED CI credits as possible.





# LEED 2009 For Commercial Interiors Project Checklist

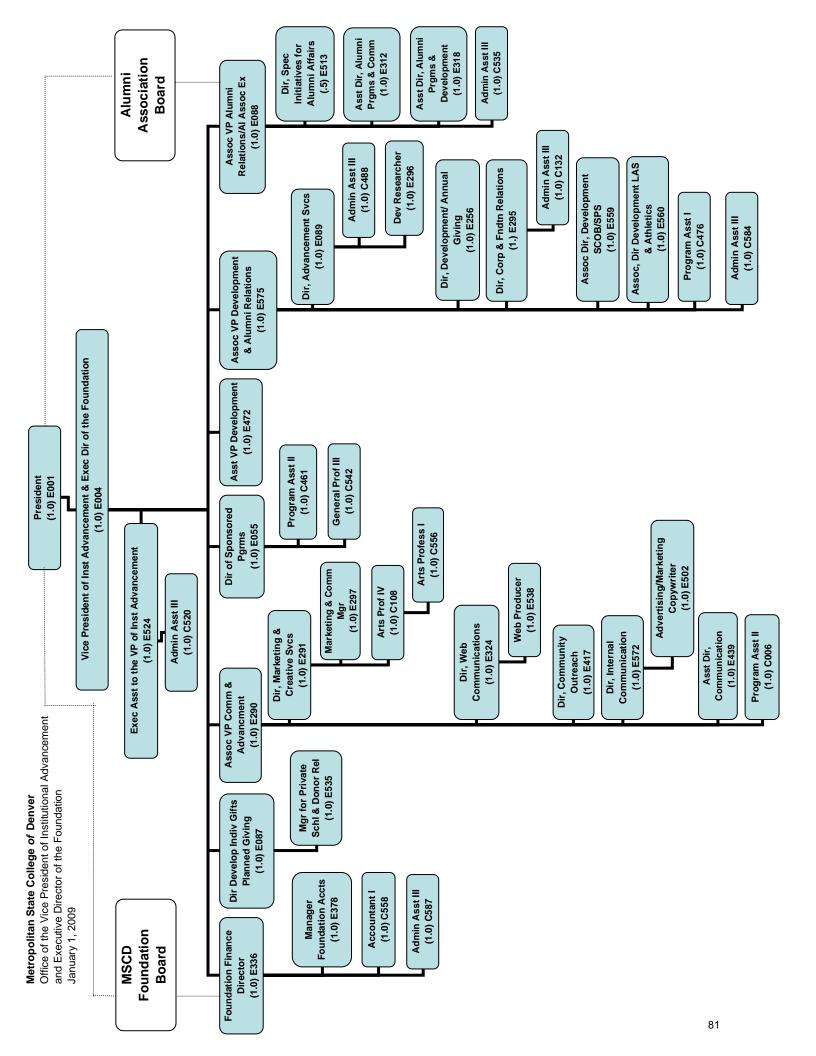
Project Name: Metropolitan State College of Denver- Backfill Project Project Address Metropolitan State College of Denver P.O. Box 173362 Denver, Colorado LEED Goal: Project to be completed in compliance with LEED standards where applicable 12 2 **Sustainable Sites** 21 Points 7 5 SSc1 Site Selection 1 to 5 Option 1: Select a LEED Certified Building 5 Option 2: Locate in a Building That Meets: up to 5 Path 1: Brownfield Redevelopment Path 2: Stormwater Design - Quantity Control Path 3: Stormwater Design - Quality Control Path 4: Heat Island Effect - Nonroof Path 5: Heat-Island Effect - Roof Path 6: Light Pollution Reduction Path 7: Water Efficient Landscaping -Reduce by 50% Path 8: Water Efficient Landscaping - No Potable Water Use or Irrigation Path 9: Innovative Wastewater Technologies Path 10: Water Use Reduction: 30% reduction Path 11: On-site Renewable Energy Path 12: Other Quantifiable Environmental Performance 6 SSc2 Development Density and Community Connectivity 6 6 SSc3.1 Alternative Transportation - Public Transportation Access 6 SSc3.2 Alternative Transportation - Bicycle Storage and Changing Rooms 2 SSc3.3 Alternative Transportation - Parking Availability Yes **Water Efficiency 11** Points 0 WEp1 **Water Use Reduction** Required WEc1 Water Use Reduction 6 to 11 30% Reduction 6 35% Reduction 8 40% Reduction 11 Yes **Energy & Atmosphere** 15 22 **37** Points Fundamental Commissioning of the Building Energy Systems Required EAp1 **Minimum Energy Performance** EAp2 Required EAp3 **Fundamental Refrigerant Management** Required

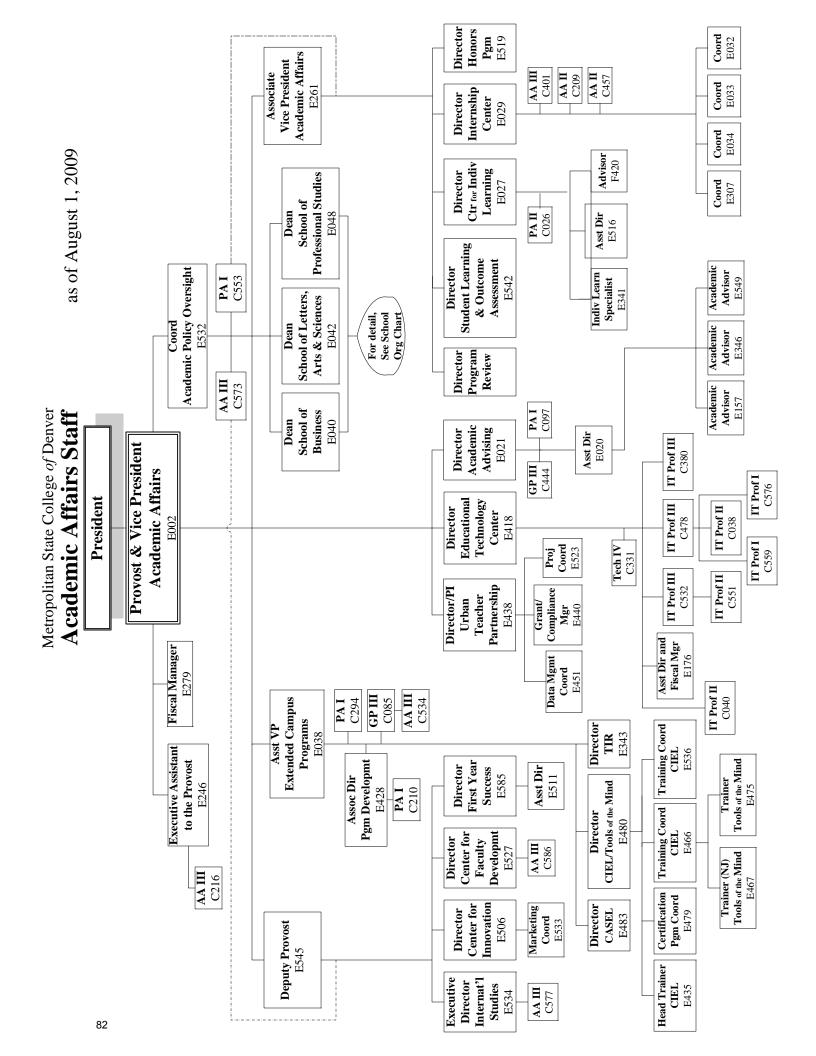
2 3 C EAc1.1 Optimize Energy Performance - Lighting Power	1 to 5
1 15% Reduction	1
20% Reduction	2
25% Reduction	3
30% Reduction	4
35% Reduction	5
0 2 1 c EAc1.2 Optimize Energy Performance - Lighting Controls	1 to 3
Daylight Controls for Daylit Areas	1
1 Daylight Controls for 50% of the Lighting Load	1
1 Occupancy Sensors for 75% of the Connected Lighting Load	1
0 5 5 C EAc1.3 Optimize Energy Performance - HVAC	5 to 10
Equipment Efficiency	5
5 Zoning Controls	5
OR	
Reduce Design Energy Cost and 15% Improvement	5
Reduce Design Energy Cost and 30% Improvement	10
0 1 3 C EAc1.4 Optimize Energy Performance - Equipment and Appliances	1 to 4
70% ENERGY STAR	1
77% ENERGY STAR	2
84% ENERGY STAR	3
90% ENERGY STAR	4
5 C EAc2 Enhanced Commissioning	5
5 d EAc3 Measurement & Verification	2 to 5
Install Sub-Metering Equipment	2
Tenant Pays for Energy	3
<b>—</b>	J
OR	
OR Metering, Measurement and Payment Accountability	5
OR	
OR Metering, Measurement and Payment Accountability  Green Power	5
OR Metering, Measurement and Payment Accountability  Green Power  Yes ? No	5 5
OR Metering, Measurement and Payment Accountability  Green Power	5
OR Metering, Measurement and Payment Accountability  Section 1. Se	5 5 14 Points
OR Metering, Measurement and Payment Accountability  Storage & Collection of Recyclables	5 5 14 Points Required
OR Metering, Measurement and Payment Accountability  5	5 5 14 Points Required
OR Metering, Measurement and Payment Accountability  Solution of Recyclables  MRc1.1 Tenant Space - Long-Term Commitment  MRc1.2 Building Reuse - Maintain Interior Nonstrucutral Components	14 Points  Required  1 1 to 2
OR Metering, Measurement and Payment Accountability  Solution of Payment Accountability  Green Power  MRp1 Storage & Collection of Recyclables  MRc1.1 Tenant Space - Long-Term Commitment  MRc1.2 Building Reuse - Maintain Interior Nonstrucutral Components  40% Reuse	14 Points  Required  1 to 2
OR Metering, Measurement and Payment Accountability  Factor of Green Power  MRp1 Storage & Collection of Recyclables  MRc1.1 Tenant Space - Long-Term Commitment  MRc1.2 Building Reuse - Maintain Interior Nonstrucutral Components  40% Reuse  60% Reuse	14 Points  Required  1 1 to 2  1 2
OR Metering, Measurement and Payment Accountability  Fact Green Power  Materials & Resources  MRc1.1 Tenant Space - Long-Term Commitment  MRc1.2 Building Reuse - Maintain Interior Nonstrucutral Components  40% Reuse 60% Reuse 60% Reuse  MRc2 Construction Waste Management	14 Points  Required  1 to 2  1 to 2
OR Metering, Measurement and Payment Accountability  FAC4  Green Power  MRp1  Storage & Collection of Recyclables  MRc1.1 Tenant Space - Long-Term Commitment  MRc1.2 Building Reuse - Maintain Interior Nonstrucutral Components  40% Reuse  60% Reuse  60% Reuse  The property of the power of th	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
OR  Metering, Measurement and Payment Accountability  Factor Green Power  MRp1 Storage & Collection of Recyclables  MRc1.1 Tenant Space - Long-Term Commitment  MRc1.2 Building Reuse - Maintain Interior Nonstrucutral Components  40% Reuse 60% Reuse 60% Reuse 1 1 1 C MRc2 Construction Waste Management 1 Divert 50% from Disposal Divert 75% from Disposal	14 Points  Required  1 1 to 2  1 to 2  1 to 2  1 to 2
OR Metering, Measurement and Payment Accountability  Fes	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
OR Metering, Measurement and Payment Accountability  Factor of Green Power  MRp1 Storage & Collection of Recyclables  MRc1.1 Tenant Space - Long-Term Commitment  MRc1.2 Building Reuse - Maintain Interior Nonstrucutral Components  40% Reuse 60% Reuse 60% Reuse 1 1 1 c MRc2 Construction Waste Management 1 Divert 50% from Disposal Divert 75% from Disposal Reuse 5%	14 Points  Required  1 1 to 2
OR Metering, Measurement and Payment Accountability  Factoring of the power of the	14 Points  Required  1 1 to 2
OR Metering, Measurement and Payment Accountability  Free Power    MRp1   Storage & Collection of Recyclables	14 Points  Required  1 1 to 2  1 to 2
Metering, Measurement and Payment Accountability  Green Power  Yes ? No  MRp1 Storage & Collection of Recyclables  MRc1.1 Tenant Space - Long-Term Commitment  MRc1.2 Building Reuse - Maintain Interior Nonstrucutral Components  40% Reuse 60% Reuse 60% Reuse 1 1 1 c MRc2 Construction Waste Management 1 Divert 50% from Disposal Divert 75% from Disposal Divert 75% from Disposal MRc3.1 Materials Reuse Reuse 5% Reuse 10%  1 0 0 c MRc3.2 Materials Reuse - Furniture and Furnishings  MRc4 Recycled Content	14 Points  Required  1 1 to 2  1 2  1 to 2
OR Metering, Measurement and Payment Accountability  Free Power    MRp1   Storage & Collection of Recyclables	14 Points  Required  1 1 to 2  1 to 2

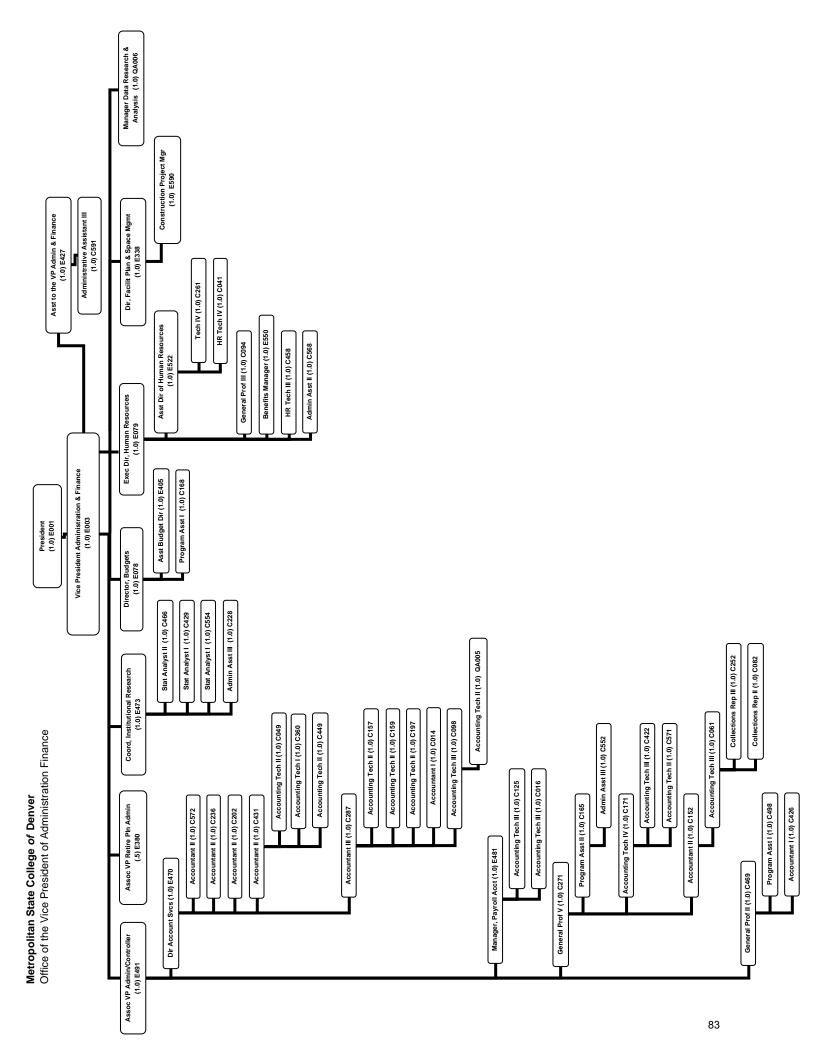
1 c MRc5 <b>Re</b>	egional Materials	1 to 2
1	20% of Materials Manufactured	1
	20% of Materials Manufactured and 10% Extracted	2
	apidly Renewable Materials	1
1   C MRc7 C	ertified Wood	1
Yes ? No		
6 4 7 Indoor	Environmental Quality	17 Points
FOn1 Mi	inimum IAQ Performance	Required
	nvironmental Tobacco Smoke (ETS) Control	Required
	utdoor Air Delivery Monitoring	1
	creased Ventilation	1
<del></del>	onstruction IAQ Management Plan - During Construction	1
	onstruction IAQ Management Plan - Before Occupancy	1
	ow-Emitting Materials - Adhesives and Sealants	1
	ow-Emitting Materials - Paints and Coatings	1
	ow-Emitting Materials - Flooring Systems	1
	ow-Emitting Materials - Composite Wood and Agrifiber Products	1
	ow-Emitting Materials - Systems Furniture and Seating	1
	door Chemical & Pollutant Source Control	1
<del></del>	ontrollability of Systems - Lighting	1
	ontrollability of Systems - Thermal Comfort	1
	hermal Comfort - Design	1
	hermal Comfort - Verification	1
	aylight & Views - Daylight	1
2	75% of Spaces	1
	90% of Spaces	2
1 d EQc8.2 <b>D</b> a	aylight & Views - Views for Seated Spaces	1
Yes ? No	-yg	
2 4 0 Innova	tion in Design	6 Points
- Innova		01011110
1 d IDc1.1 <b>in</b>	novation or Exemplary Performance: 100% Green Power	1
	novation or Exemplary Performance: Green Housekeeping	1
	novation or Exemplary Performance: Commuter Choice Program	1
	novation:100% FSC Certified Wood	1
<del></del>	novation: Cradle-to-Cradle / SCS Certified Product	1
1 C IDc2 LF	EED <sup>®</sup> Accredited Professional	1
Yes ? No		
2 0 2 Region	nal Priority	4 Points
	egional Priority: SSc2 Development Density and Community Connectivity	1
	egional Priority: SSc3.1 Alternative Transportation - Public Transportation /	1
	egional Priority: WEc1 Water Use Reduction, Reduce by 40%	1
	egional Priority: EAc1.1 Optimize Energy Performance - Lighting Power,	1
Yes ? No	educe by 35%	
	t Totals (pre-certification estimates)	10 Points
-,	points Silver 50-59 points Gold 60-79 points Platinum 80 points and above	10 1 011113

**Appendix** 

**ORG CHARTS** 







**Appendix** 

**SPACE NEEDS DATABASE** 

### Metro State - Backfill Project School Summary Requirements

		Current	Current	Planning	1-5 Year Req.	ır Req.	5+ Yea	5+ Year Req.
	School/Department	Offices	SF	SF-Current	Staff	SF	Staff	SF
LAS	Letters Arts and Sciences							
AAS	AFRICAN AMERICAN STUDIES	9	1,844	1,508	10	2,142	10	2,142
ART	ART COMMUNICATION	4	2,526	3,321	5	3,591	5	3,591
CAS/JOUR	JOURNALISM	9	1,117	1,202	10	1,796	12	2,120
CAS/SLHS	SPEECH/LANGUAGE/HEARING	5	296	1,040	7	2,457	5	2,079
CAS/SPE	SPEECH COMMUNICATION	8	1,100	1,040	14	5,387	10	7,641
ENG	ENGLISH	33	8,153	10,503	39	9,793	45	12,601
SIH	HISTORY	29	4,553	4,752	33	6,453	34	7,425
L	INTERNATIONAL STUDIES	29	783	945	5	1,269	5	1,877
H	PHILOSOPHY	16	2,292	3,254	23	5,218	4	2,140
PSC	POLITICAL SCIENCE	12	2,223	2,133	13	2,295	13	2,295
SABS	SOCIOLOGY/ANTRHOPOLOGY/BEHAV.SCI.	16	3,173	2,763	19	3,902	19	4,469
SWK	SOCIAL WORK	6	1,800	2,619	30	5,225	24	4,104
WMS	INST. WOMEN'S STUDIES	2	1,071	830	7	780	10	1,140
LAS	LAS ADMIN & DEAN	8	2,500	2,572	8	2,572	8	2,572
	School GSF Total	183	34,102	38,480	223	52,878	204	56,194
Comments								

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AFRI AFRI AFRI AFRI AFRI AFRI AFRI AFRI			Space	Current	Current	Planning	1-5 Year Req.	r Req.	5+ Year Req.	ır Req.
Arts and Sciences         Arts and Sciences         African AMERICAN STUDIES         Administrative Areas         Administrat		School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	Qty.	Total
AFRICAN AMERICAN STUDIES         Administrative Areas         4         6         1         180         1 <td>LAS Letter</td> <td>s Arts and Sciences</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	LAS Letter	s Arts and Sciences								
Administrative Areas         Administrative Areas         4         6         1         180         1         180           Directior / Chair Office         120         4         180         7         840           Faculty Office         120         4         80         2         160           SUB-TOTAL         80         1         40         1,180         10           Sub-TOTAL         120         1         1,180         1         1           Sub-TOTAL         120         1         1,20         1         1         1           Sub-TOTAL         120         1         1,20         1 <t< td=""><td>AAS</td><td>AFRICAN AMERICAN STUDIES</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	AAS	AFRICAN AMERICAN STUDIES								
Directior / Chair Office         180         1         180         1         180           Faculty Office         120         4         480         7         840           Set Bard and Vorkstation         80         1         80         7         160           Sub-TOTAL         6         740         10         1,180         1,180           Sub-TOTAL         120         1         120         1         120           Sub-TOTAL         257         1         257         1         120           Sub-TOTAL         150         1         257         1         150           Sub-TOTAL         150         1         150         1         150           Sub-TOTAL         1         257         1         150         1         150           Sub-TOTAL         1         1         1         1         1         1         1           Sub-TOTAL         1	Current Loc.									
Faculty Office         120         4         480         7         840           Secretarial / Clerical Workstation         80         1         80         2         60           Instruction Support         120         7         4         7         1         1           Study Room         Support Facilities         120         1         120         1         120           Support Facilities         257         1         257         1         257         1         257           Support Facilities         257         1         257         1         257         1         257           Subport Facilities         257         1         257         1         257         2           Subport Facilities         257         1         257         1         257         2           Subport Eacilities         257         1         257         1         257         407           Subport Eacilities         257         1         257         407         2           Subport Eacilities         2         2         2         2         2         2         2           Subport Eacilities         2         2         2		Directior / Chair Office	180	-		180	-	180	1	180
Secretarial / Clerical Workstation         80         1         80         2         160           SUB-TOTAL         6         740         10         1,180           Study Room         120         1         1,20         1           Sub-TOTAL         120         1         1,20         1           Subport Facilities         257         1         257         1         257           Storage Room/ Copy Room         257         1         257         407           Conference Room         3UB-TOTAL         257         1         150           SUB-TOTAL         1         150         1         407           Department ASF Total         1,366         1,117         1,587           Department Gross Total w/ Circulation         1,844         1,508         2,142	Rectory	Faculty Office	120	4		480	7	840	7	840
SUB-TOTAL         6         740         10         1,180           Instruction Support         120         1         1,180           Study Room         120         1         120           Support Facilities         257         1         257           Storage Room/ Copy Room         257         1         257           Conference Room         150         1         150           SUB-TOTAL         257         1         407           Department ASF Total         1,366         1,117         1,587           Department Gross Total w/ Circulation         1,844         1,508         2,142		rical Work	80	1		08	2	160	2	160
Instruction Support         120         1		SUB-TOTAL		9		740	10	1,180	10	1,180
Study Room         120         1         120         1           Sub-TOTAL         Sub-TOTAL         120         1         <		Instruction Support								
SUB-TOTAL         120           Support Facilities         120           Support Reculities         1           Storage Room/ Copy Room         150         1           Conference Room         150         1           SUB-TOTAL         257         1           Department ASF Total         1,366         1,117         1,176           Department Gross Total w/ Circulation         1,844         1,508         2,2		Study Room	120	1		120	1	120	1	120
Support Facilities         257         1         257         1           Storage Room/ Copy Room         150         1         1         1           Conference Room         150         1         1         1           SUB-TOTAL         257         1         1           Department ASF Total         1,366         1,117         1,117         1,117           Department Gross Total w/ Circulation         1,844         1,508         2,2		SUB-TOTAL				120		120		
Storage Room/ Copy Room         257         1         257         1           Conference Room         150         1         1         1           SUB-TOTAL         257         1         1           Department ASF Total         1,366         1,117         1,508           Department Gross Total w/ Circulation         1,844         1,508         2,2		Support Facilities								
Conference Room         150         1         150         1           SUB-TOTAL         257            Department ASF Total         1,366         1,117         1,117           Department Gross Total w/ Circulation         1,844         1,508         2,2		Storage Room/ Copy Room	257	-		257	-	257	1	257
SUB-TOTAL         257           Department ASF Total         1,366         1,117 <td></td> <td>Conference Room</td> <td>150</td> <td>1</td> <td></td> <td>120</td> <td>1</td> <td>150</td> <td>1</td> <td>150</td>		Conference Room	150	1		120	1	150	1	150
Department ASF Total		SUB-TOTAL				257		407		407
Department ASF Total         1,366         1,117           Department Gross Total w/ Circulation         1,844         1,508										
Department Gross Total w/ Circulation 1,508 1,508		Department ASF Total			1,366	1,117		1,587		1,587
Comments					1,844	1,508		2,142		2,142
	Comments									

		Space	Current	Current	Planning	1-5 Year Req.	r Req.	5+ Ye	5+ Year Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	Qty.	Total
LAS Letters	LAS Letters Arts and Sciences								
ART	ART COMMUNICATION								
Current Loc.	Administrative Areas								
A2	Faculty Office	120	4		480	4	480	4	480
	Adjunct Space Shared (3-5 people per room)	120				1	120	1	120
	SUB-TOTAL		4		480	9	009	2	009
	Instruction Support								
A2	Computer Lab	006	2		1,800	2	1,800	2	1,800
	Printing Press	80				1	80	1	80
A2	Individual Lab Study	180	1		180	1	180	<b>←</b>	180
	SUB-TOTAL				1,980		2,060		2,060
	Department ASF Total			2,368	2,460		2,660		2,660
	Department Total w/ Circulation 35%			2,526	3,321		3,591		3,591
Comments									
No future growth									

		Space	Current	Current	Planning	1-5 Year Req.	ır Req.	5+ Year Req.	r Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	۵ty.	Total	Qty.	Total
LAS Letters	LAS Letters Arts and Sciences								
CAS	JOURNALISM								
Current Loc.	Current Loc. Administrative Areas								
	Director / Chair Office	180	1		180	-	180	-	180
C2	Faculty Office	120	4		480	7	840	6	1,080
C5	Secretarial / Clerical Workstation	80	1		80	2	160	2	160
	SUB-TOTAL		9		740	10	1,180	12	1,420
	Instruction Support								
C2	Stack	150	1		150	-	150	-	150
	SUB-TOTAL				150		150		150
	Department ASF Total			1,052	068		1,330		1,570
	Department Total w/ Circulation 35%			1,117	1,202		1,796		2,120
Comments									
Wish List Item:	Wish List Item: 6 work stations for Capitol Reporter								

		Space	Current	Current	Planning	1-5 Year Req.	r Req.	5+ Year Req.	r Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	Qty.	Total
LAS Letters	LAS Letters Arts and Sciences								
CAS/SLHS	SPEECH / LANGUAGE / HEARING								
Current Loc.	Administrative Areas								
W2	Director / Chair Office	180	1		180	1	180	-	180
W2	Faculty Office	120	3		360	2	009	2	240
W2	Secretarial / Clerical Workstation	80	1		80	-	80	2	160
	SUB-TOTAL		2		620	7	098	2	280
	Instruction Support								
	Sound Booth	150	1		150	1	150	1	150
	Communication Lab (25 people)	810				1	810	1	810
	SUB-TOTAL				120		096		096
	Department ASF Total			296	0//		1,820		1,540
	Department Total w/ Circulation 35%			296	1,040		2,457		2,079
Comments									
Need more info	Need more info on existing counts of this sub-department under CAS								

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		Space	Current	Current	Planning	1-5 Year Req.	ır Req.	5+ Year Req.	ır Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	Qty.	Total
LAS Letters	LAS Letters Arts and Sciences								
CAS	SPE/SPEECH COMMUNICATION								
Current Loc.	Administrative Areas								
	Director / Chair Office	180	-		180	_	180	-	180
MO-1	Faculty Office	120	9		720	6	1,080	4	480
MO-1	Secretarial / Clerical Workstation	80	2		160	4	320	2	400
	Adjunct Space Shared for all CAS (3-5 people per roon	240	0		0	_	240	1	240
	SUB-TOTAL		8		1,060	14	1,640	10	880
	Instruction Support								
	Communication Lab (25 people)	810	0			1	810	4	3,240
	Multi-Media Lab	006	0			1	006	1	006
	Radio Studio	640	0			1	640	1	640
	SUB-TOTAL						2,350		4,780
	Department ASF Total				1,060		3,990		5,660
	Department Total w/ Circulation 35%			1,100	1,431		5,387		7,641
Comments									
Need more info	Need more info on Radio Studio to determine sf								

		Space	Current	Current	Planning	1-5 Year Req.	ar Req.	5+ Year Req.	r Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	Qty.	Total
LAS Letters	LAS Letters Arts and Sciences								
ENG	ENGLISH								
Current Loc.	Administrative Areas								
KC4	Director / Chair Office	180	_		180	1	180	-	180
KC4	Faculty Office	120	31		3,720	35	4,200	40	4,800
KC4	Secretarial / Clerical Workstation	80	1		80	2	160	2	160
	Adjunct Space Shared (3-5 people per room)	240	0		0	1	240	3	720
	SUB-TOTAL		33		3,980	39	4,780	45	5,860
	Instruction Support								
KC3	Writing Center (20)	009	1		0	1	009	1	009
	Writing Center (40)	1,000	0		0		0	1	1,000
	Computer Lab	006	0		0	1	006	1	006
	SUB-TOTAL						1,500		2,500
	Support Facilities								
KC4	Copy/Storage	237	1		237	2	474	2	474
KC4	Conference	009	1		200	1	200	1	200
	SUB-TOTAL						974		974
	Department ASF Total			6:039	7,780		7,254		9,334
	Department Total w/ Circulation 35%			8,153	10,503		9,793		12,601
Comments									
Mail Room adde	Mail Room added at 1-5 vr. (carried existing sf)								

		Space	Current	Current	Planning	1-5 Year Req.	ır Req.	5 + Year Req.	r Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	Qty.	Total
LAS Letters	LAS Letters Arts and Sciences								
SIH	HISTORY								
Current Loc.	Current Loc. Administrative Areas								
	Director / Chair Office	180	-		180	1	180	-	180
C2,	Faculty Office	120	24		2,880	29	3,480	29	3,480
C2, C3	Secretarial / Clerical Workstation	80	2		160	2	160	2	160
	Adjunct Space Shared (3-5 people per room)	240	2		0	1	240	2	480
	SUB-TOTAL		29		3,220	33	3,880	34	4,300
	Support Facilities								
C2	Copy/Storage	150	2		300	2	300	4	009
	Conference Room (30-40 people)	009	0		0	1	009	1	009
	SUB-TOTAL				300		006		1,200
	Department ASF Total			3,918	3,520		4,780		5,500
	Department Total w/ Circulation 35%			4,553	4,752		6,453		7,425
Comments									

		Space	Current	Current	Planning	1-5 Year Req.	Req.	5 + Year Req.	ır Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	Qty.	Total
LAS Letters	LAS Letters Arts and Sciences								
Ī	INTERNATIONAL STUDIES								
Current Loc.	Current Loc. Administrative Areas								
C2,	Faculty Office	120	2		240	2	240	2	240
C2	Secretarial / Clerical Workstation	08	2		160	2	160	2	160
	Adjunct Space Shared (3-5 people per room)	240			0	1	240	1	240
	SUB-TOTAL		4		400	2	640	2	640
	Support Facilities								
C2	Copy/Storage	150	1		150	1	150	4	009
	Conference Room (6-8 people)	150	0		150	1	150	1	150
	SUB-TOTAL				300		300		750
	Department ASF Total				200		940		1,390
	Department Total w/ Circulation 35%			783	945		1,269		1,877
Comments									

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		Space	Current	Current	Planning	1-5 Year Req	r Req.	5 + Year Req	r Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	Qty.	Total
LAS Letters	LAS Letters Arts and Sciences								
SNW	MUSIC								
Current Loc.	Administrative Areas								
	Director / Chair Office	180	-		180	1	180	1	180
ARTS2,	Faculty Office	120	17		2,040	33	3,960	98	4,320
ARTS2,		80	2		160	2	160	2	160
ARTS2	Adjunct space Shared (3-5 people per room)	240	1			1	240	1	240
			21	3,073	2,380	37	4,540	40	4,900
	Study Facilities								
	Classroom	1,250				4			
	SUB-TOTAL						0		
	Instruction Support								
ART1, ART2	Class Lab	810	4		3,240	4	3,240	4	3,240
ARTS2	Class Lab w/ Utilities	1,071	1		1,071	1	1,071	l l	1,071
ARTS2	Class Lab Service	256	2		512	2	512	2	512
ARTS1, ARTS2	Individual Study Lab (Student Practice Rooms)	80	17		1,360	22	1,760	52	2,000
	Music Library	1,500				1	1,500	l l	1,500
	Student Piano Lab (20 people)	640				2	1,280	7	2,560
	Small Ensemble Rehearsal (15 people)	300				3	006	4	1,200
	Large Ensemble Rehearsal (120 people)	2,500				3	7,500	4	10,000
	SUB-TOTAL			6,177	6,183		17,763		22,083
	Support Facilities								
ARTS2	Central Storage	552	2		1,104	2	1,104	7	1,104
ARTS2	Office Service	190	2		380	2	380	2	380
	Conference Room (30 - 40 people)	009				1	009	1	009
	SUB-TOTAL			1,104	1,104		2,084		2,084
	Department ASF Total			10,354	299'6		24,387		29,067
	Department Total w/ Circulation 35%			13,978	13,050		32,922		39,240
Comments									

Need acoustical isolation in the following areas: Rehearsal, performance space, lab and support space (practice rooms), Faculty teaching studios Reduced request of an additional 60 Student Practice Rooms in 5+ years to 8 additional total.
Wish List Items: (1) Opera Production Space. Need sf requirement, (1) Recital Hall Performance Space, (1) Concert Hall Performance Space

School/Department LAS Letters Arts and Sciences PHI PHILOSOPHY Current Loc. Administrative Areas Exception of Faculty Office KC4 Faculty Office KC4 Secretarial / Clerical Workstati Adjunct Space Shared (3-5 ps. SUB-TOTAL Study Facilities Classroom (Seminar) SUB-TOTAL SUB-TOTAL STUDY Facilities Classroom (Seminar) SUB-TOTAL SUB-TOTAL SUB-TOTAL SUB-TOTAL							יים ופשו ויבולי	2+ rear Red	
PHILOSOPHY Administrative Areas Administrative Areas Director / Chair Office Faculty Office Secretarial / Clerical Wo Adjunct Space Shared SUB-TOTAL Study Facilities Classroom (Seminar) SUB-TOTAL Study Facilities Classroom (Seminar) SUB-TOTAL Study Facilities Classroom (Seminar)		Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	Qty.	Total
PHILOSOPHY Administrative Areas Director / Chair Office Faculty Office Secretarial / Clerical Wo Adjunct Space Shared SUB-TOTAL Study Facilities Classroom (Seminar) SUB-TOTAL Support Facilities Copy/Storage									
Administrative Areas Director / Chair Office Faculty Office Secretarial / Clerical Wo Adjunct Space Shared SUB-TOTAL Study Facilities Classroom (Seminar) SUB-TOTAL Sub-TOTAL Study Facilities Classroom (Seminar) Sub-TOTAL									
Director / Chair Office Faculty Office Secretarial / Clerical Wo Adjunct Space Shared SUB-TOTAL Study Facilities Classroom (Seminar) SUB-TOTAL Subport Facilities Copy/Storage									
Faculty Office   Secretarial / Clerical Wo		180	-		180	1	180	1	180
Secretarial / Clerical Wo Adjunct Space Shared Sub-TOTAL Study Facilities Classroom (Seminar) Sub-TOTAL Support Facilities Copy/Storage		120	14		1,680	19	2,280	1	120
Adjunct Space Shared SUB-TOTAL Study Facilities Classroom (Seminar) Sub-TOTAL Support Facilities Copy/Storage	kstation	80	1		80	1	80	1	38
	(3-5 people per room)	240				2	480	1	240
			16		1,940	23	3,020	4	620
		640	2		0	7	0	10	)
					0		0		
		120	1		120	1	120	2	240
KC4 Conference Room (20 people)	(e)c	320	1		320	1	350	1	320
Common Room		375	0		0	1	375	1	375
SUB-TOTAL					470		845		962
Department ASF Total				1,698	2,410		3,865		1,585
Department Total w/ Circula	rculation 35%			2,292	3,254		5,218		2,14(

Share Conference Room and Common Room with Political Science now Part time faculty included in head count

		Space	Current	Current	Planning	1-5 Year Req.	ır Req.	5+ Year Req.	ır Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	Qty.	Total
LAS Letters	LAS Letters Arts and Sciences								
PSC	POLITICAL SCIENCE								
	Administrative Areas								
	Director / Chair Office	180	_		180	_	180	1	180
<del>Х</del>	Faculty Office	120	10		1,200	11	1,320	11	1,320
<b>K</b> 4	Secretarial / Clerical Workstation	08	1		80	1	08	1	80
	Adjunct Space Shared (3-5 people per room)	240	0		240	0	0	0	0
	SUB-TOTAL		12		1,460	13	1,580	13	1,580
	Support Facilities								
<b>4</b>	Copy/Storage	120	1		120	1	120	1	120
	SUB-TOTAL				120		120		120
	Department ASF Total			1,647	1,580		1,700		1,700
	Department Total w/ Circulation 35%			2,223	2,133		2,295		2,295
Comments									
Share conferen	Share conference room with Philosophy								
									I

		Space	Current	Current	Planning	1-5 Year Req.	ır Req.	5+ Ye	5+ Year Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	Qty.	Total
LAS Letters	LAS Letters Arts and Sciences								
SABS	SOC, ANTHRO, & BEHAV. STUDIES								
Current Loc.									
S2	Director / Chair Office	180	1		180	1	180	1	180
S2	Faculty Office	120	14		1,680	17	2,040	17	2,040
S2	Secretarial / Clerical Workstation	08	-		80	-	80	1	80
	Adjunct Space Shared (3-5 people per room)	240	0		240	2	480	0	0
	SUB-TOTAL		16		1,940	19	2,780	19	2,300
	Instruction Support								
	Computer Lab	006	0		0	-	006	1	006
	SUB-TOTAL						006		006
	Support Facilities								
S2	Copy/Storage	110	1		110	1	110	1	110
	SUB-TOTAL		0		107		110		110
	Department ASF Total			2,350	2,047		2,890		3,310
	Department Total w/ Circulation 35%			3,173	2,763		3,902		4,469
Comments									
I an ton use in (	ap top use in Computer Lab is critica								

		Space	Current	Current	Planning	1-5 Year Req.	r Req.	5+ Year Req.	Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	Qty.	Total
LAS Letters	LAS Letters Arts and Sciences								
SWK	SOCIAL WORK / FAMILY CENTER								
	Administrative Areas								
C2	Director / Chair Office	180	1		180	-	180	_	180
C2	Faculty Office	120	9		720	24	2,880	15	1,800
	Adjunct Space Shared (3-5 people per room)	100	0		0	2	200	1	100
C2	Secretarial / Clerical Workstation	80	2		160	3	160	7	160
	SUB-TOTAL		6		1,060	30	3,420	24	2,240
	Support Facilities								
	Copy/Storage	200	0		0	1	200	1	300
	Conference Room (12-15 people)	250				1	250	2	200
	SUB-TOTAL				088		450		800
	Dept Gross Total Admin			1,691	1,940		3,870		3,040
	Department Total w/ Circulation 35%			1,800	2,619		5,225		4,104
Comments									

		Space	Current	Current	Planning	1-5 Ye	1-5 Year Req.	5+ Yea	5+ Year Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	1-5 Year	Total
LAS Letters	-AS Letters Arts and Sciences								
WMS	INSTITUTE WOMEN'S STUDIES & SERVICES								
Current Loc.	Administrative Areas								
	Director / Chair Office	180	1		180	-	180	1	180
1033 9th St.	Faculty Office	120	2		240	က	360	9	720
1033 9th St.	Secretarial / Clerical Workstation	80	2		160	က	240	3	240
	SUB-TOTAL		2		280	7	180	10	1,140
	Support Facilities								
1033 9th St.		200	1		200	1	200		
1033 9th St.	Storage	20	1		20	1	09	1	20
	SUB-TOTAL				250		250		20
	Dept Gross Total Admin			1,071	830		1,030		1,190
	Department Total w/ Circulation 35%			1,344	1,121		1,391		1,607
Comments									

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		Space	Current	Current	Planning	1-5 Year Req.	r Req.	5+ Year Req.	r Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	Total	1-5 Year	Total
LAS Letters	LAS Letters Arts and Sciences								
LAS	LAS ADMIN & DEAN								
Current Loc.	Administrative Areas								
	Dean's Office	240	-		240	-	240	1	240
	Associate Dean's Office	180	3		240	3	540	3	540
	Staff Office	120	2		240	2	240	2	240
	Secretarial / Clerical Workstation	80	2		160	2	160	2	160
	SUB-TOTAL		8		1,180	8	1,180	8	1,180
	Support Facilities								
	Conference Room (25 people)	375	1		375	1	375	1	375
	File Room	200	1		200	1	200	1	200
	Copy/Storage	150	1		150	1	150	1	150
	SUB-TOTAL				725		725		725
	Dept Gross Total Admin				1,905		1,905		1,905
	Department Total w/ Circulation 35%			2,500	2,572		2,572		2,572

### Metro State - Backfill Project School Summary Requirements

		Current	Current	Planning	1-5 Year Req.	r Req.	5+ Year Req.	r Req.
	School/Department	Offices	SF	SF-Current	Staff	SF	Staff	SF
SOB	School of Business							
ACC	ACCOUNTING	15	2,549	2,403	21	4,037	27	4,739
CIS	COMPUTER INFORMATION SYSTEMS	17	3,473	2,727	18	5,191	20	5,852
ECO	ECONOMICS	6	1,673	1,485	13	2,795	14	2,957
NE.	FINANCE	6	1,581	1,485	10	1,971	6	2,147
MGT	MANAGEMENT	18	3,641	2,889	22	4,199	25	4,685
MKT	MARKETING	14	2,685	2,295	17	3,146	20	3,969
SOB	SCHOOL OF BUSINESS ADMIN & DEAN	10	1,379	4,116	11	7,309	18	8,389
	School GSF Total	92	16,981	17,400	112	28,646	133	32,736
Comments								

RNL

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# Metro State - Back Fill Project School of Business

		Space	Current	Current	Planning	1-5 Year Req.	r Reg.	5+Year Req	. Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SOB - Scho	SOB - School of Business								
ACC	ACCOUNTING								
Current Loc.	Administrative Areas								
င္ပ	Chair Office	180	1		180	_	180	1	180
C3	Faculty Office	120	12		1,440	17	2,040	18	2,160
C3	Secretarial / Clerical Workstation	80	2		160	2	160	7	260
	Adjunct Space (shared 3-5 people per room)	240	0		0	_	240	_	240
	SUB-TOTAL		15	2,251	1,780	21	2,620	27	3,140
	Instruction Space								
	Classroom (20 people)	640	0	0	0	2	0	2	
	SUB-TOTAL						0		
	Support Facilities								
	Conference Room (12-15 people)	250	0		0	_	250	_	250
	Storage & Copy Room	120	0	0	0	1	120	1	120
	SUB-TOTAL						370		370
	Department ASF Total			2,251	1,780		2,990		3,510
	Department Total w/ Circulation @ 35%			2,549	2,403		4,037		4,739
Comments									

Classroom noted above for Master's Program- to include monitors that fold into table. Share conference with another department.

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# Metro State - Back Fill Project School of Business

		Space	Current	Current	Planning	1-5 Year Req.	r Reg.	5+Year Red	· Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SOB School	SOB School of Business								
CIS	COMPUTER INFORMATION SYSTEMS								
Current Loc.	Administrative Areas								
W2	Chair Office	180	_		180	1	180	_	180
W2	Faculty Office	120	14		1,680	14	1,680	16	1,920
W2	Secretarial / Clerical Workstation	80	2		160	2	160	2	160
	Adjunct Space (shared 3-5 people per room)	240	0		0	1	240	1	240
	SUB-TOTAL		17	3,292	2,020	18	2,260	20	2,500
	Instruction Support								
	Computer Lab (25-30 people, plus ancillary lab)	1,465	1		1	1	1,465	1	1,465
	SUB-TOTAL						1,465		1,465
	Support Facilities								
	Conference Room (12-15 people)	250	0		0	0	0	1	250
	Storage & Copy Room	120	0	0	0	1	120	1	120
	SUB-TOTAL				0		120		370
	Department ASF Total			3,292	2,020		3,845		4,335
	Department Total w/ Circulation @ 35%			3,473	2,727		5,191		5,852
Comments									

Computer Lab to be similar to West Classroom 262 with break out space with 4-6 computers, plus 10%. Share conference with another department.

# Metro State - Back Fill Project School of Business

		Space	Current	Current	Planning	1-5 Year Req.	ır Req.	5+Year Req.	r Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SOB Schoo	SOB School of Business								
ECO	ECONOMICS								
Current Loc.	Administrative Areas								
C3	Chair Office	180	-		180	-	180	-	180
C3	Faculty Office	120	7		840	10	1,200	11	1,320
C3	Secretarial/ Clerical Workstation	80	1		80	1	80	1	80
	Adjunct Space (shared 3-5 people per room)	240	0			1	240	1	240
	SUB-TOTAL		6	1,563	1,100	13	1,700	14	1,820
	Instruction Space								
	Seminar Classroom (20 people)	640	0	0	0	_	0	_	0
	SUB-TOTAL						0		
	Support Facilities								
	Conference Room (12-15 people)	250	0			_	250	1	250
	Storage & Copy Room	120	0	0	0	1	120	1	120
	SUB-TOTAL						370	1	370
	Department ASF Total			1,563	1,100		2,070		2,190
	Department Total w/ Circulation @ 35%			1,673	1,485		2,795		2,957
Comments									

# Metro State - Back Fill Project School of Business

		Space	Current	Current	Planning	1-5 Year Req.	ar Req.	5+Year Req.	r Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SOB School	SOB School of Business								
NIL	FINANCE								
Current Loc.	Administrative Areas								
W2	Chair Office	180	_		180	1	180	-	180
W2	Faculty Office	120	7		840	7	840	9	720
W2	Secretarial / Clerical Workstation	80	_		8	1	80	_	80
	Adjunct Space (shared 3-5 people per room)	240	0		0	1	240	1	240
	SUB-TOTAL		6	1,497	1,100	10	1,340	6	1,220
	Support Facilities								
	Conference Room (12-15 people)	250	0			0	0	1	250
	Storage & Copy Room	120	0	0	0	1	120	1	120
	SUB-TOTAL						120		370
	Department ASF Total			1,497	1,100		1,460		1,590
	Department Total w/ Circulation @ 35%			1,581	1,485		1,971		2,147
Comments									

No future growth Share a lab with Econ and CIS - Trading Room double as Finance Lab? Share conference with another department.

		Space	Current	Current	Planning	1-5 Year Req.	r Req.	5+Year Red.	r Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SOB School	SOB School of Business								
TĐM	MANAGEMENT								
Current Loc.	Administrative Areas								
W2	Chair Office	180	1		180	_	180	7	180
ZW	Faculty Office	120	15		1,800	18	2,160	21	2,520
W2	Secretarial / Clerical Workstation	80	2		160	2	160	2	160
	Adjunct Space (shared 3-5 people per room)	240	0		0	1	240	1	240
	SUB-TOTAL		18	3,469	2,140	22	2,740	25	3,100
	Support Facilities								
	Conference Space (12-15 people)	250	0			_	250	7	250
	Storage & Copy Room	120	0	0	0	1	120	1	120
	SUB-TOTAL						370		370
	Department ASF Total			3,469	2,140		3,110		3,470
	Department Total w/ Circulation @ 35%			3,641	2,889		4,199		4,685
Comments									

# Metro State - Back Fill Project School of Business

		Space	Current	Current	Planning	1-5 Ye	1-5 Year Req.	5+Yea	5+Year Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SOB School	SOB School of Business								
MKT	MARKETING								
Current Loc.	Administrative Areas								
C3	Chair Office	180	-		180	1	180	_	180
C3	Faculty Office	120	12		1,440	14	1,680	17	2,040
C3	Secretarial / Clerical Workstation	80	_		8	_	80	_	80
	Adjunct Space (shared 3-5 people per room)	240	0		0	1	240	1	240
	SUB-TOTAL		14		1,700	17	2,180	20	2,540
	Support Facilities								
	Conference Room (12-15 people)	250	0			0	0	_	250
	Storage & Copy Room	150	0	0	0	1	150	1	150
	SUB-TOTAL						150		400
	Total Transfer of			Ġ			occ c		0700
	Department ASF Total			0 0			2,330		2,940
	Department Total w/ Circulation @ 35%			2,685	2,295		3,146		3,969
Comments									

Wish List Item: Sales Call Center at 700 sf at 1-5 yr. Share conference with another department.

### Metro State - Back Fill Project **School of Business**

		Space	Current	Current	Planning	1-5 Year Req.	ar Req.	5+Year Req.	r Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SOB School	SOB School of Business								
SOB	SCHOOL OF BUSINESS ADMIN & DEAN								
Current Loc.	Administrative Areas								
W2	Dean's Office	240	1		240	1	240	-	240
W2	Associate Dean's Office	180	1		180	1	180	_	180
W2	Faculty Office	120	4		480	5	009	7	840
	Staff Office	120	3		360	3	098	7	840
	Secretarial / Clerical Workstation	80	1		08	1	08	2	160
	SUB-TOTAL		10		1,340	11	1,460	18	2,260
	Instruction Space								
	Smart Classroom (35 people)	1,120	0	0	0	3	0	15	0
	Student Learning Room (6-8 people)	250	0	0	0	3	0	15	0
	SUB-TOTAL						0		0
	Instruction Support								
W2	Computer Lab	006	1		006	1	006	-	006
W2	Open Laboratory	434	1		434	1	434	-	434
	Lab	006	0	0	0	1	006	_	006
	Trading Room (20 people)	929	0	0	0	1	929	_	675
	Student / Faculty Lounge	400	0	0	0	1	400	1	400
	SUB-TOTAL				1,334		3,309		3,309
	Support Facilities								
W2	Conference Room (15-20 people)	375	1		375	1	375	_	375
	Storage & Copy Room	120	0	0	0	1	120	_	120
	Faculty Break Room	150	0	0	0	1	150	1	150
	SUB-TOTAL				375		645		645
	Department ASF Total			1,338			5,414		6,214
	Department Total w/ Circulation @ 35%			1,379	4,116		608'4		8,389
Comments									

Comments

Trading Room used with Finance Dept. Can double as Multi-Purpose Room
Econ. & Business Forecasting lab for 25-30 people (shared)
Smart Classroom request a total of 15 rooms in 1-5 year timeframe
Student Learning Room request a total of 18 rooms in 1-5 year timeframe
Classrooms are shown in the space plans as "shared" amenities, unless they are dedicated labs.

# Metro State - Backfill Project School Summary Requirements

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		Current	Current	Planning	1-5 Year Req.	r Req.	5+Year Req.	r Req.
	School/Department	Offices	SF	SF-Current	Staff	SF	Staff	SF
SPS	School of Professional Studies							
ാറാ	CRIMINAL JUSTICE	13	2,801	3,530	20	5,299	22	7,223
COM	TECH COMM & MEDIA PRODUCTION	8	1,913	3,618	10	5,319	13	6,129
HEPRO	HEALTH PROFESSIONS	19	2,826	3,232	29	608'9	27	10,778
HSP	HUMAN SERVICES	13	3,035	2,799	14	3,123	16	3,771
NUR	NURSING	11	5,082	4,994	17	7,343	19	7,829
SERT-TEED	SPEC. ED, EARLY CHILD, READ & ED. TECH	19	-	3,569	28	5,297	28	5,297
ESLK-TEED	ELEM., SECOND., LINGUIST. DIV., K-12 ED.	21	-	3,839	27	5,673	27	4,433
TEED-ADMIN	TEACHER EDUCATION - ADMIN	10	11,089	2,365	10	3,279	10	3,077
ROTC	RESERVE OFFICER'S TRAINING CORP	2	323	324	2	1,053	9	1,215
SPS	SPS ADMIN & DEAN	6	2,165	2,187	6	3,915	6	3,915
	School GSF Total	125	29,233	30,457	169	47,110	177	53,667
Comments								

RNL

		Space	Current	Current	Planning	1-5 Year Req.	r Req.	5+Year Red	ır Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SPS School o	SPS School of Professional Studies								
Ol.O	CRIMINAL JUSTICE								
Current Loc.	Administrative Areas								
W1	Chair Office	180	1		180	_	180	1	180
S2, W1	Faculty Office	120	10		1,200	14	1,680	16	1,920
S2, W1	Secretarial / Clerical Workstation	08	2		160	2	160	2	160
	Adjunct Space (shared 3-5 people per room)	240	0		0	က	720	3	720
	SUB-TOTAL		13	1,956	1,540	20	2,740	22	2,980
	Instruction Support								
W1	Computer Lab (20 people)	006	1		006	1	006	2	1,800
W1	Class Lab Service	175	1		175	1	175	2	320
	SUB-TOTAL			585	1,075		1,075		2,150
	Support Facilities								
W1	Office Service	110	1		110	1	110	2	220
	SUB-TOTAL				110		110		220
	Department ASF Total			2,538	2,615		3,925		5,350
	Department Total w/ Circulation @ 35%			2,801	3,530		5,299		7,223
Comments									

Currently have 11 full time faculty, and +/- 30 adjunct staff Crime Lab is Computer Lab. Note: 2 rooms were requested, the second is a wish list item Conference room is located on the last section as a school shared amenity.

		Space	Current	Current	Planning	1-5 Year Req.	ar Req.	5+Ye	5+Year Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SPS School o	SPS School of Professional Studies								
COM	TECH COMM & MEDIA PRODUCTION								
Current Loc.	Administrative Areas								
W2	Chair Office	180	1		180	1	180	1	180
W2	Faculty Office	120	9		720	7	840	8	096
W2	Secretarial / Clerical Workstation	80	1		08	1	80	1	80
W2	Adjunct Space (shared 3-5 people per room)	240	0		0	1	240	3	720
	SUB-TOTAL		8		086	10	1,340	13	1,940
	Instruction Support								
	Whisper Room	160	1		160	1	160	1	160
	Writing Lab (20 people)	640	1		040	1	640	1	640
Tech	Video Editing Lab (20 people)	006	1		006	2	1,800	2	1,800
	SUB-TOTAL				1,700		2,600		2,600
	Department ASF Total			1,417	2,680		3,940		4,540
	Department Total w/ Circulation @ 35%			1,913	3,618		5,319		6,129
Comments									
Conference room	Conference room is located on the last section as a school shared	hared amenity.							

		Space	Current	Current	Planning	1-5 Year Req.	r Req.	5+Yea	5+Year Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SPS School	SPS School of Professional Studies				Γ				
HEPRO	HEALTH PROFESSIONS								
Current Loc.	Administrative Areas								
MO-1	Director Office	180	1		180	1	180	1	180
MO-1	Faculty Office	120	16		1920	23	2760	23	2760
	Secretarial / Clerical Workstation	80	7		160	3	240	3	240
	Adjunct Space (shared 3-5 people per room)	240	0		0	2	480	3	
	SUB-TOTAL		19		2,260	29	3,660	27	3,900
	Instructional Space								
	Classroom (30 person)	810	0		0	3	0	9	4,860
	SUB-TOTAL						0		
	Instruction Support								
	Class Lab (30 people)	006	0		0	1	006	4	3,600
	SUB-TOTAL						006		3,600
	Support Facilities								
	Office Service	100	0		0	1	100	1	100
MO-1	Storage	134	1		134	1	134	1	134
	File Room (dedicated)	250	0		0	1	250	1	250
	SUB-TOTAL				134		484		484
	Department ASF Total			2,093	2,394		5,044		7,984
	Department Total w/ Circulation @ 35%			2,826	3,232		608'9		10,778
Cemmon									

**Comments**Requested 6 classrooms, and have put 3 on a wish list for 1-5 year timeframe. Want classrooms close to offices.

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#### Metro State - Backfill Project School of Professional Studies

		Space	Current	Current	Planning	1-5 Ye	1-5 Year Req.	5+Year Req.	ır Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SPS School c	SPS School of Professional Studies								
HSP	HUMAN SERVICES								
Current Loc.	Administrative Areas								
	Chair Office	180	1		180	1	180	1	180
	Faculty Office	120	10		1200	10	1200	10	1200
	Secretarial / Clerical Workstation	80	2		160	2	160	2	160
	Adjunct Space (shared 3-5 people per room)	240	0		0	1	240	3	720
	SUB-TOTAL		13	2,007	1,540	14	1,780	16	2,260
	Instruction Support								
	Lab/Classroom	533	1		533	1	533	1	533
	SUB-TOTAL			772	533		533		533
	Department ASF Total			2,779	2,073		2,313		2,793
	Department Total w/ Circulation @ 35%			3,035	2,799		3,123		3,771
Comments									
Need Questionna	Need Questionnaire from department.								

ation Std (ASF) Qty. SF  Std (ASF) Qty. SF  180 1  120 8  80 2  80 2  900 0  110  1250 0  1250 0  1250 0  1250 0  1250 0  1250 0  1250 0  1250 0  14949			Space	Current	Current	Planning	1-5 Year Red.	r Req.	5+Year Req.	· Req.
Nursing   Nurs		School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
Administrative Areas         Administrative Areas         180         1         180         1         180         1 </td <td>SPS School</td> <td>of Professional Studies</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	SPS School	of Professional Studies								
Administrative Areas         Administrative Areas         180         1         180         1         180         1         180         1         2         2         2         2         2         1         2         2         1         2         2         1         2         1         2         1         2         1         2         1         2         1         2         1         2         1         2         1         2         1         2         1         2         1	NUR	NURSING								
Chair Office   180	Current Loc.	Administrative Areas								
Director/Faculty Office   120   8   960   13   1,560   14   1,16   1,6	A2	Chair Office	180	_		180	-	180	~	180
Secretarial / Clerical Workstation   80   2   160   2   160   2   160   2   160   2   160   2   160   17   1740   19   1740   19   1740   19   1740   19   1740   19   1740   19   1740   19   1740   19   1740   19   1740   19   1740   19   1740   19   1740   19   1740   19   1740   19   1740   19   1740   1750   17	A2	Director/Faculty Office	120	8		096	13	1,560	14	1,680
Adjunct Space (shared 3-5 people per room)         240         0         1         240         2           SUB-TOTAL         1         1         240         1         240         1         2           Instruction Support         1         300         1         240         1         2           Lab Control Space         300         0         1         300         1         2           Instructional Space         810         0         1         300         1         3           Classroom (30 person)         810         0         2         0         2         1,6         5           Classroom (30 person)         810         810         0         2         0         4         5,1           Classroom (30 person)         1250         0         2         0         4         5,1           Classroom (30 person)         1650         3         450         3         450         4         5,1           Support Facilities         150         3         450         3         450         4         5,1           Subport Facilities         150         3         450         3         450         450         4		Secretarial / Clerical Workstation	80	2		160	2	160	2	160
SUB-TOTAL         11         1,300         17         2,140         19           Instruction Support         900         0         1         900         1           Lab (25 person)         SUB-TOTAL         810         0         2         0         2           Instruction 30 person)         810         810         0         2         0         2           Classroom (30 person)         1250         0         2         0         4           Classroom (30 person)         1250         0         2         0         4           SUB-TOTAL         Support Facilities         150         3         450         3           SUB-TOTAL         450         3         450         3           SUB-TOTAL         450         3         450         3           SUB-TOTAL         450         450         3         450         3           SUB-TOTAL         450         450         3         450         3           Existing Current Space to Remain in Admin/Central/West         1,949         1,949         1,949         1,949           Department Total w/ Circulation @ 35%         5,082         4,994         7,343         1		Adjunct Space (shared 3-5 people per room)	240	0		0	1	240	2	480
Instruction Support         900         0         1         900         1           Lab (25 person)         SUB-TOTAL         900         1         900         1           Instructional Space         810         0         2         0         2         0         2           Classrroum (30 person)         1250         0         2         0         4         4           Classrroum (30 person)         1250         0         2         0         4         4           Classrroum (30 person)         1250         0         2         0         4         4           Classrroum (30 person)         1250         0         2         0         4         4           SUB-TOTAL         Subport Facilities         150         3         450         3         450         3           Office Service         Sub-TOTAL         450         3         450         3         450         3           Existing Current Space to Remain in Admin/Central/West         1,949         1,949         1,949         1,949         1,949         1,949         1,949         1,949         1,949         1,743         1,743         1,743         1,743         1,744         1,744         <		SUB-TOTAL		11		1,300	17	2,140	19	2,500
Lab (25 person)         Lab (25 person)         Popolarities         Popolar		Instruction Support								
SUB-TOTAL         SUB-TOTAL         900		Lab (25 person)	006	0			_	006	_	006
Instructional Space         810         0         2         0         2           Classroom (30 person)         1256         0         2         0         2           Classroom (50 person)         1256         0         4         2         0         4           SUB-TOTAL         150         3         450         3         450         3         450           SUB-TOTAL         150         3         450         3         450         3         450         3           Existing Current Space to Remain in Admin/Central/West         1,949         1,949         1,949         1,949         1,949         1,949         1,949         1,349		SUB-TOTAL						006		006
Classroom (30 person)         810         0         2         0         2         0         2         0         2         0         2         0         2         0         2         0         2         0         2         0         2         0         4         0         2         0         4         0         4         0         4         0         4         0         4         0         4         0         4         0         4         0         4         0         4         0         0         2         0         0         2         0         4         0         4         0         4         0         4         0         0         2         0         4         0         0         2         0         0         2         0         0         2         0         0         2         0		Instructional Space								
Classroom (50 person)         (1250         0         4         4           SUB-TOTAL         SUB-TOTAL         6         4         4           Support Facilities         150         3         450         3         450         3           Office Service         Service         450         3         450         3         450         3           Existing Current Space to Remain in Admin/Central/West         1,949         1		Classroom (30 person)	810	0			2	0	2	1,620
SUB-TOTAL         Sub-TOTAL         0		Classroom (50 person)	1250	0			2	0	4	5,000
Support Facilities         150         3         450         3         450         3         450         3         450         3         450         3         450         3         450         3         450         3         450         3         450         3         450         3         450         5         450         5         450         5         450         5         450         5         450         5         450         5         450         5         450         5         450         5         450         5         450         5         450         5         450         5         450         6         7         450         8         9         8         9		SUB-TOTAL						0		
Office Service         150         3         450         3         450         3           SUB-TOTAL         450         450         450         3           Existing Current Space to Remain in Admin/Central/West         1,949         1,949         1,949         1,949           Department ASF Total         5,439         5,439         5,439         5,439         1,343		Support Facilities								
Admin/Central/West 1,949 1,949 1,949 7,343 8450 850 850 850 850 850 850 850 850 850 8	A2	Office Service	150	3		450	3	450	3	450
Admin/Central/West 1,949 1,949 1,949 1,949 2,994 7,343 8		SUB-TOTAL				450		450		450
1,949         1,949         1,949           3,699         5,439           35%         5,082         4,994			itral/West							
35% 5,082 4,994 7,343					1,949	1,949		1,949		1,949
35%         5,439         5,439           4,994         7,343										
35% 5,082 4,994 7,343 T						3,699		5,439		5,799
		Department Total w/ Circulation @ 35%			5,082	4,994		7,343		7,829

Confirm requested lab space needs to be dedicated. Yes.
Total current sf includes space in 114, and Suite 109 in Technology Building

		Space	Current	Current	Planning	1-5 Ye	1-5 Year Req.	5+Year Req.	ır Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SPS School of	SPS School of Professional Studies								
SERT-TEED	SERT-TEED SPEC. ED, EARLY CHILD, READ & ED. TECH								
Current Loc.	Administrative Areas								
	Chair Office	180	1		180	1	180	1	180
	Faculty Office	120	18		2,160	24	2,880	24	2,880
	Secretarial / Clerical	80	0		0	1	80	1	80
	Adjunct Space (shared 3-5 people per room)	240	0		0	2	480	2	480
	SUB-TOTAL		19		2,340	28	3,620	28	3,620
	Support Facilities								
W1, W2	Office Service	152	2		304	2	304	2	304
	SUB-TOTAL				304		304		304
	Department ASF Total				2,644		3,924		3,924
	Department Total w/ Circulation @ 35%				3,569		5,297		5,297
Comments									

		Space	Current	Current	Planning	1-5 Year Req.	r Req.	2+Ye2	5+Year Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SPS School c	SPS School of Professional Studies								
ESLK-TEED	ESLK-TEED ELEM., SECOND., LIGUIST. DIV., K-12 ED.								
Current Loc.	Administrative Areas								
	Chair Office	180	_		180	_	180	_	180
	Faculty Office	120	19		2,280	22	2,640	22	2,640
	Secretarial / Clerical Workstation	80	-		80	2	160	2	160
	Adjunct Space (shared 3-5 people per room)	240	0		0	2	480	2	480
	SUB-TOTAL		21		2,540	27	2,980	27	2,980
	Instructional Space								
	Classroom (30 person)	918	0		0	1	918	9	5,508
	SUB-TOTAL						918		
	Support Facilities								
W1, W2	Office Service	152	2		304	2	304	2	304
	SUB-TOTAL				304		304		304
	Department ASF Total				2,844		4,202		3,284
	Department Total w/ Circulation @ 35%				3,839		5,673		4,433
Comments									

RN

#### **School of Professional Studies** Metro State - Backfill Project

		Space	Current	Current	Planning	1-5 Year Req.	r Req.	5+Yea	5+Year Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SPS School c	SPS School of Professional Studies								
TEED-ADMIN	TEED-ADMIN TEACHER EDUCATION - ADMIN.								
Current Loc.	Administrative Areas								
	Staff Office	120	5		009	5	009	5	009
	Staff Workstation	80	3		240	3	240	3	240
	Secretarial / Clerical Workstation	80	2		160	2	160	2	160
	SUB-TOTAL		10	6,631	1,000	10	1,000	10	1,000
	Instruction Space								
	Classroom (30 people)	810	0		0	3	0	3	2,430
W1	Classroom Large	1,250	1		1,250	1	0	1	1,250
	SUB-TOTAL			684			0		
	Support Facilities								
W1	Conference Room (6-8 people)	150	1		150	2	300	1	150
	Conference Room (20 people)	375	0			1	375	1	375
W1, W2	Office Service	152	1		152	2	304	2	304
	Storage (Student Teaching)	150	1		150	1	150	1	150
	Files (Student Teaching)	300	1		300	1	300	1	300
	SUB-TOTAL			668	752		1,429		1,279
	Department ASF Total			8,214	1,752		2,429		2,279
	Department Total w/ Circulation @ 35%			11,089			3,279		3,077
Comments									

All classroom/instructional and lab/instruction support spaces are shown as shared amenities in TEED-ADMIN Student Teaching - 2 offices, 1 workstation, storage space, files (could use high density filing)

Admissions - 1 office, 1 workstation Grad. Coord., Field Coord, 3 staff, and storage - shared group should be adjacent to Student Teaching UTP is not included in these counts

		Space	Current	Current	Planning	1-5 Ye	1-5 Year Req.	5+Year Red	ır Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SPS School c	SPS School of Professional Studies								
ROTC	RESERVE OFFICER'S TRAINING CORP								
Current Loc.	Administrative Areas								
S2	Faculty Office	120	2		240	4	480	2	009
	Secretarial/ Clerical Workstation	80				1	80	1	80
	SUB-TOTAL		2	239	240	5	480	9	009
	Instruction Space								
	Classroom (20 people)	640	0		0	1	0	1	640
	SUB-TOTAL				0		0		
	Support Facilities								
	Conference Room (6-8 people)	150			0	1	150	_	150
	Storage	150	0			1	150	1	150
	SUB-TOTAL			0			300		300
	Department ASF Total			239	240		780		006
	Department Total w/ Circulation @ 35%			323	324		1,053		1,215
Comments									
Clarify how milch	Clarify how much future storage space is peeded								

		Space	Current	Current	Planning	1-5 Year Req.	r Req.	2+Xe	5+Year Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
SPS School	SPS School of Professional Studies								
SPS	SCHOOL OF PROFESSIONAL STUDIES								
	Administrative Areas								
W1	Dean's Office	240	1		240	1	240	1	240
W1	Associate Dean's Office	180	1		180	1	180	1	180
W1	Staff Office	120	3		360	3	360	3	360
W1	Secretarial/ Clerical Workstation	80	4		320	4	320	4	320
	SUB-TOTAL		6		1,100	6	1,100	6	1,100
	Support Facilities								
	Conference Room (6-8 people)	150			0	1	150	1	150
W1	Conference Room (12-15 people)	250	1		250	3	750	3	120
	Conference Room (30 people)	009	0		0	1	009	1	009
	Storage	150	0		270	2	300	2	300
	SUB-TOTAL			0	520		1,800		1,800
	Department ASF Total			2,050	1,620		2,900		2,900
	Department Total w/ Circulation @ 35%			2,165	2,187		3,915		3,915
Comments									
School shared co	School shared conferencing - 2 work study share one 80 s.f. space	4							

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# Metro State - Backfill Project School Summary Requirements

		Curren	t Current	Planning	1-5 Year Req.	r Req.	5+Year Req.	Req.
	School/Department	Offices	SF	SF-Current	Staff	SF	Staff	SF
/PIT	Information Technology							
/PIT	INFORMATION TECHNOLOGY		4 23,466	3 23,466	10	27,686	13	28,990

		Current	Current	Planning	1-5 Year Req.	ar Req.	5+Year Req.	r Req.
	School/Department	Offices	SF	SF-Current	Staff	SF	Staff	SF
VPAA	Vice President - Academic Affairs							
VPAA	EDUCATION TECHNOLOGY CENTER	8	2,633	3,698	14	4,979	6	5,561
HONOR	HONOR'S PROGRAM	2	1,084	452	2	2,896	15	5,083
CFD	CENTER FOR FACULTY DEVELOPMENT	2	0	527	4	2,079	4	2,079
	School GSF Total	12	3,717	4,676	23	9,954	28	12,722

			Current	Planning	1-5 Year Req	Req.	5+Year Req.	Req.
	School/Department		# of Rooms	SF-Current	# of Rooms	SF	# of Rooms	SF
Classroom	Classroom							
SYT	LETTTERS, ARTS & SCIENCES		0	0	17	25,320	21	29,600
SOB	SCHOOL OF BUSINESS		0	0	6	23,220	15	23,220
SPS	SCHOOL OF PROFESSIONAL STUDIES		0	0	12	10,870	17	15,800
VPIT	VP INFORMATION TECHNOLOGY		0	0	2	1,620	2	1,620
VPAA	VP ACADEMIC AFFAIRS		0	0	3	2,090	4	2,730
	School GSF Total		0	0	43	59,410	23	68,620

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### Metro State - Backfill Project VP Information Technology

		Space	Current	Current	Planning	1-5 Yea	1-5 Year Req.	5+Yea	5+Year Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
VPIT	VP INFORMATION TECHNOLOGY								
Current Loc.	Administrative Areas								
Admin 4	Faculty Office	120	0		0	0	0	2	240
Admin 4	Staff Workstation	08	4		320	10	800	10	800
	Secretarial / Clerical Workstation	80	0		0	0	0	1	80
	SUB-TOTAL		4		320	10	800	13	1,120
	Instruction Support								
General	Large Computer Lab ( 50 people)	1,800	0		0	1	1,800	1	1,800
	SUB-TOTAL				0		1,800		1,800
	Support Facilities								
W2	Service Center (2 offices/10 workstations)	840	0		0	12	840	12	10,080
ຮ	CN Cabling Room	200	0.5		100	1	200	1	200
Admin 4	Data Center Expansion (raised floor)	800	0		0	1	800	1	800
	SUB-TOTAL				100		1,840		11,080
	Existing Current Space to Remain in Admin/Central/M	al/West							
	SUB-TOTAL			22,672	22,672		22,672		22,672
	Department ASF Total			0	0		27,112		36,672
	Department Gross Total w/ Circulation			23,466	23,466		27,686		28,990
Comments									

Staff requests - 10 staff, and 12 additional staff for IT Service Center. Service Center staff in 60 s.f. workstations Current square footage represents CN cabling room on Central Classroom Building floor 3 only.

11/18/2009

Metro State - Backfill Project Vice President Academic Affairs / Provost

		Space	Current	Current	Planning	1-5 Year Req.	Red.	5+Year Reg.	r Reg.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
Vice-Presiden	Vice-President Academic Affairs / Provost								
VPAA	EDUCATION TECHNOLOGY CENTER								
Current Loc.	Administrative Areas								
C2	Administrative/Clerical Workstation	80	1		80	2	160	2	160
C2, W2	Faculty/Staff Office	120	7		840	12	1,440	7	840
C2	SUB-TOTAL		8		920	14	1,600	6	1,000
	Instruction Support								
	Computer Lab Expansion Space	006	1		169	1	169	2	1,800
	SUB-TOTAL				692	1	692	2	1,800
	Support Facilities								
	Studio Space	696	1	0	006	1	696	1	696
	Studio Space Expansion	200				1	200	1	200
C2	Copy/Storage	150	2	300	150	1	150	1	150
	SUB-TOTAL			0	1,050	3	1,319	3	1,319
	Department ASF Total			2,480	2,739		3,688		4,119
	Department Gross Total w/ Circulation			2,633	3,698		4,979		5,561
Comments									

Existing space to be have minimal construction to relocate entry to suite to opposite corridor for closer proximity to expansion space in 206.

11/18/2009

Metro State - Backfill Project Vice President Academic Affairs / Provost

		Space	Current	Current	Planning	1-5 Year Req.	Req.	5+Year Req.	r Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
VPAA Acadei	VPAA Academic Affairs / Provost								
HONOR	HONOR'S PROGRAM								
Current Loc.	Administrative Areas								
	Director / Chair Office	180				1	180	1	180
W1	Administrative/Clerical Workstation	80	1		80	1	80	1	80
W1	Faculty/Staff Office	120	1		120	3	360	13	1,560
	SUB-TOTAL		2		200	2	620	15	1,640
	Instruction Space								
	"Smart" Seminar Classroom	400				2	0	3	0
	SUB-TOTAL						0		0
	Instruction Support								
W1	Open Stack Study Room	135	1		135	1	135	1	135
	Open Stack Study Room Expansion	465				1	465	1	465
	SUB-TOTAL				135		009		009
	Support Facilities								
	Reception Area	150				1	150	1	150
	Copy/Storage	150	0	0	0	1	150	1	150
	Library/Lounge/Break	009	0	0	0	1	009	2	1,200
	Closet	25	0	0	0	1	25	1	25
	SUB-TOTAL				0		925		1,525
	Department ASF Total			803	332		2,145		3,765
	Department Gross Total w/ Circulation			1,084	452		2,896		5,083
Comments									

11/18/2009

Vice President Academic Affairs / Provost Metro State - Backfill Project

Sc		Space	Current	Current	Planning	1-5 Year Req.	r Req.	5+Year Req.	· Req.
	School/Department	Std (ASF)	Qty.	SF	SF-Current	Qty.	SF	Qty.	SF
VPAA Academic Affairs / Provost	s / Provost								
CFD CENTE	CENTER FOR FACULTY DEVELOPMENT								
Current Loc. Admini	Administrative Areas								
Library Base. Faculty Office	Office	120	2		240	4	480	4	480
SUB	SUB-TOTAL		2		240	4	480	4	480
Instruc	Instruction Support								
Worksh	Workshop Space/Lab (20-25 people)	810	0			1	810	1	810
SUB	SUB-TOTAL						810	1	810
Suppor	Support Facilities								
Library Base. Confere	Conference Room (4-6 people)	150	1		150	1	150	_	150
Storage Room	: Room	100				1	100	1	100
SUB	SUB-TOTAL				150		250	2	250
Departr	Department ASF Total				330		1,540		1,540
Departi	Department Gross Total w/ Circulation				527		2,079		2,079
Comments									
Classroom requested ca	Classroom requested can be a space that is either one large room or two rooms with a divider that can be opened with capacity for workshops of 20-25 people	n or two rooms	with a divider th	hat can be op	ened with capac	city for worksho	ops of 20-25 p∈	eople	

# Metro State - Backfill Project Classrooms

			Current	Current	Planning	1-5 Year Red.	Red.	5+ Year Req.	ır Req.
	Shared Classroom Summary		# of Rooms	SF	SF-Current	# of Rooms	SF	# of Rooms	SF
LAS	LETTERS, ARTS AND SCIENCES								
HIS	HISTORY		0	0	0	0	0	0	0
	Classroom (50 people)	1,250	0	0	0	10	12,500	12	15,000
	Classroom (65 people)	1,920	0	0	0	8	2,760	2	009'6
HH	РНILOSOPHY								
	Classroom	2,500	0	0	0	1	2,500	0	0
MUS	MUSIC								
	Classroom (50 people)	1,250	0	0	0	3	3,750	4	5,000
표	THEATRE								
	Classroom (25 people)	810	0	0	0	1	810	1	810
S LETTERS,	LAS LETTERS, ARTS AND SCIENCES TOTAL					21	25.320	21	29.600

			Current	Current	Planning	1-5 Year Req	Red.	5+ Year Red	r Req.
•	Shared Classroom Summary		# of Rooms	SF	SF-Current	# of Rooms	SF	# of Rooms	SF
SOB	SCHOOL OF BUSINESS								
ACC	ACCOUNTING								
	Classroom (20 people)	640	0	0	0	2	1,280	2	1,280
ECO	ECONOMICS								
	Seminar Classroom (20 people)	640	0	0	0	1	640	_	640
SOB	ADMIN & DEAN								
	Student Learning Room (6-8 people)	250				8	750	18	4,500
	Smart Classroom (35 people)	1,120	0	0	0	3	3,360	15	16,800
SCHOOL OF BUSINESS TOTAL	SINESS TOTAL	250	•	-	-	6	6,030	15	23,220

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## Metro State - Backfill Project Classrooms

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			Current	Current	Planning	1-5 Year Req	Red.	5+ Year Red.	ır Req.
S	Shared Classroom Summary		# of Rooms	SF	SF-Current	# of Rooms	SF	# of Rooms	SF
SPS	SCHOOL OF PROFESSIONAL STUDIES								
HEPRO	HEALTH PROFESSIONS								
	Classroom (30 person)	810	0	0	0	3	2,430	9	4,860
NUR	NURSING								
	Classroom (30 person)	810	0	0	0	2	1,620	2	1,620
	Classroom (50 person)	1,250	0	0	0	2	2,500	4	5,000
TEED	TEACHER EDU. / ADMIN								
	Classroom (30 people)	810	0	0	0	3	2,430	3	2,430
	Classroom Large	1,250	1	0	1,250	1	1,250	1	1,250
ROTC	RESERVE OFFICER'S TRAINING CORP		0	0	0	0	0	0	0
	Classroom (20 people)	640	0		0	1	640	_	640
SCHOOL OF PRO	SCHOOL OF PROFESSIONAL STUDIES TOTAL		-	٠	,	12	10.870	11	15.800

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## Metro State - Backfill Project Classrooms

			Current	Current	Planning	1-5 Year Req.	Req.	5+ Year Req.	r Req.
	Shared Classroom Summary		# of Rooms	SF	SF-Current	SF-Current # of Rooms	SF	# of Rooms	SF
VPIT	INFORMATION TECHNOLOGY								
VPIT	₽								
	Study Room / Computer Lab Non-Instructional	810	2	0	1,620	2	1,620	2	1,620
VPIT TOTAL			-	•	-	2	1,620	2	1,620

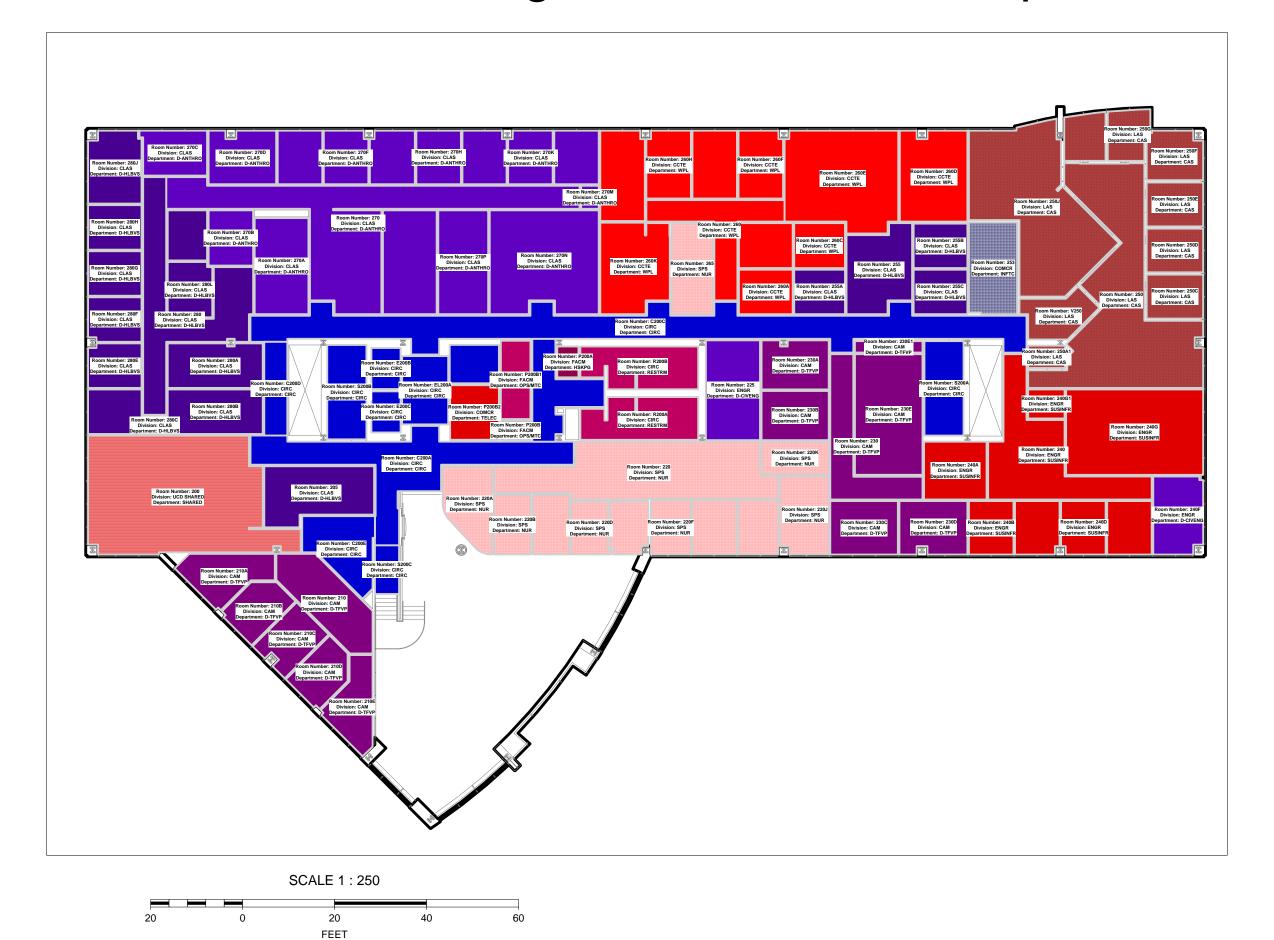
			Current	Current	Planning	1-5 Year Req	Red.	5+ Year Req.	r Req.
Ś	Shared Classroom Summary		# of Rooms	SF	SF-Current	# of Rooms	SF	# of Rooms	SF
VPAA VICE-	VPAA VICE-PRESIDENT ACADEMIC AFFAIRS / PROVOST								
HONOR	HONORS PROGRAM								
	"Smart" Seminar Classroom	640				2	1,280	3	1,920
CFD	CENTER FOR FACULTY DEVELOPMENT								
	Classroom (20-25 people)	810	0	0	0	1	810	1	810
PAA TOTAL		•	1	٠	1	က	2,090	4	2,730

RN

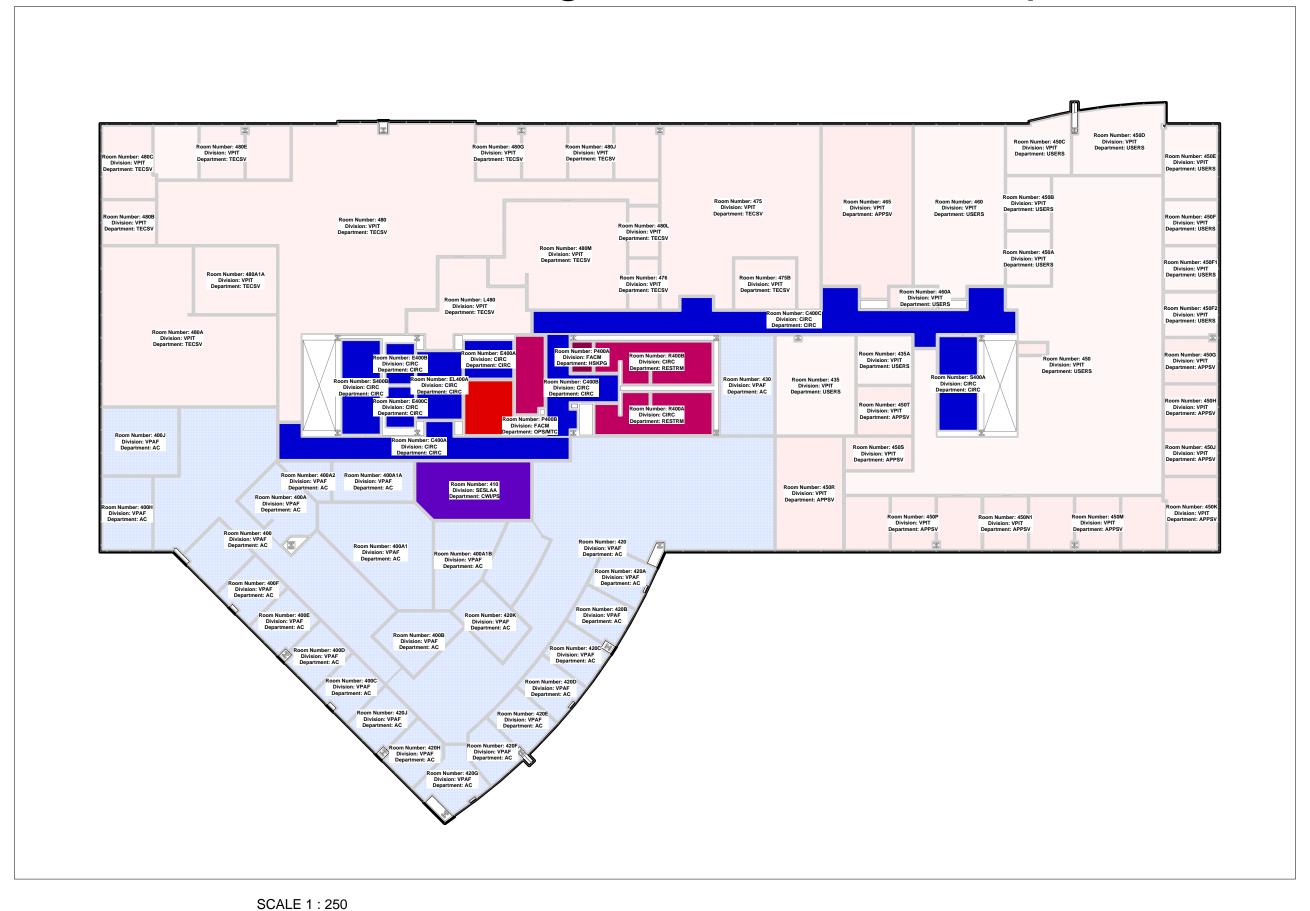
#### **Appendix**

**EXISTING OCCUPANCY DRAWINGS** 

## Administration Building - Second Floor - Departments

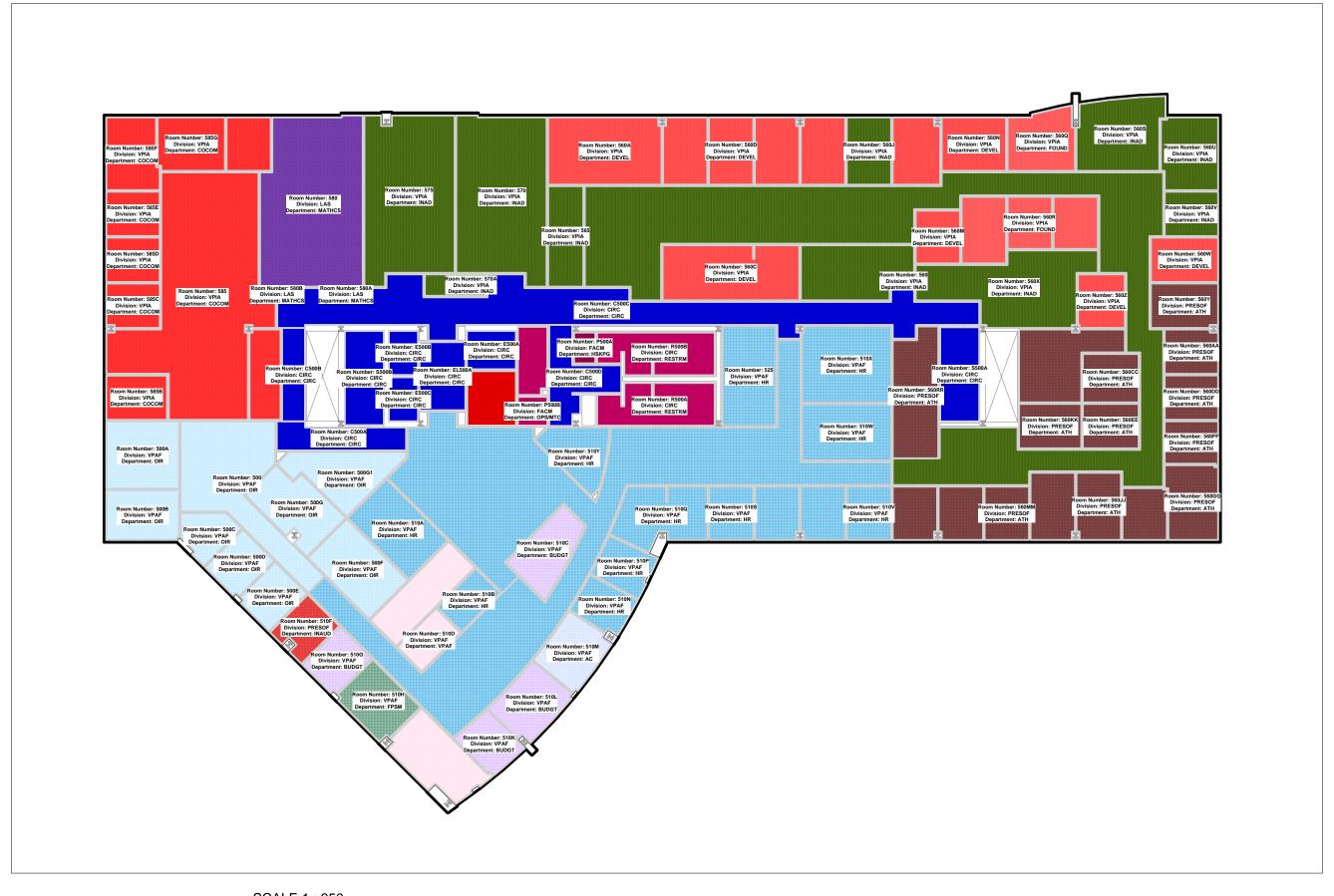


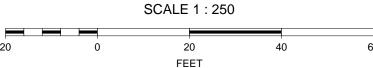
## Administration Building - Fourth Floor - Departments



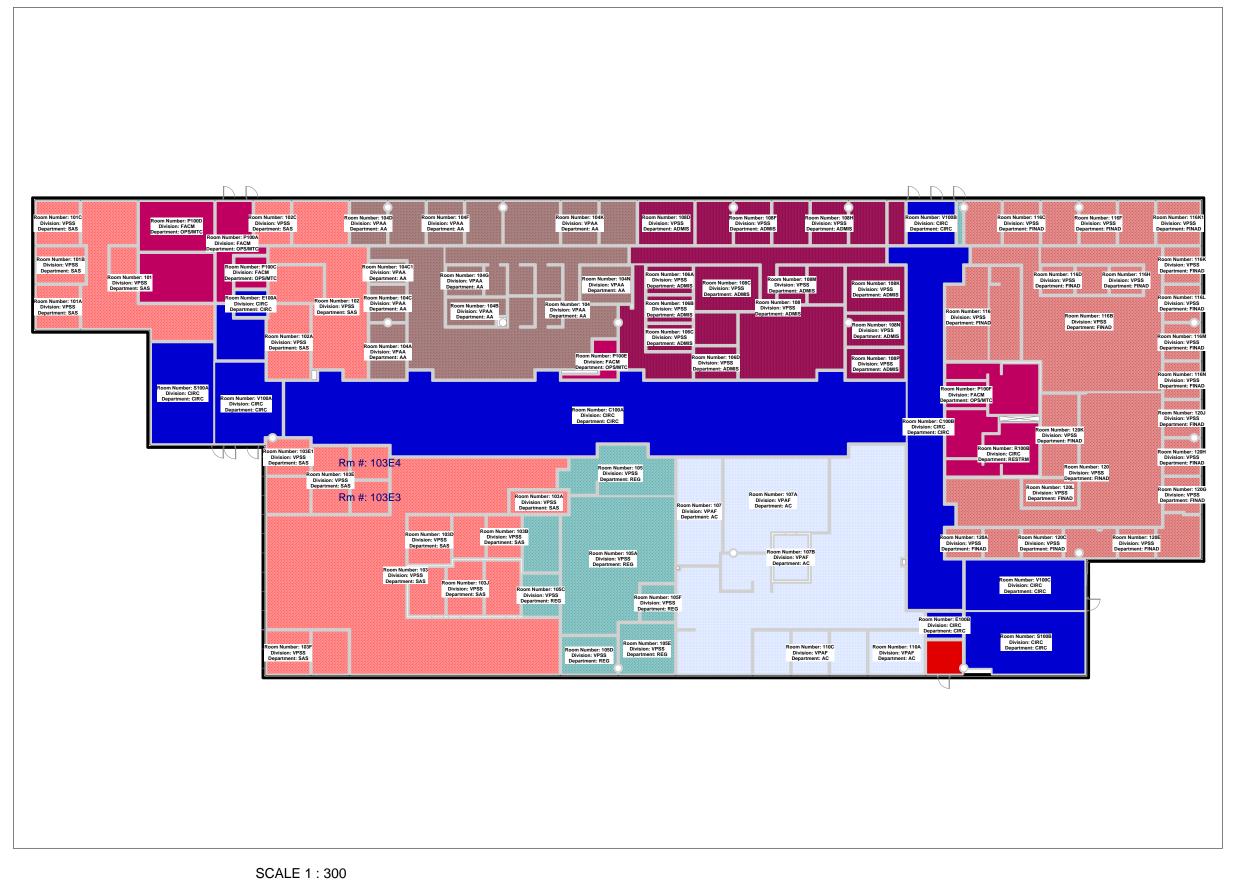
FEET

## Administration Building - Fifth Floor - Departments

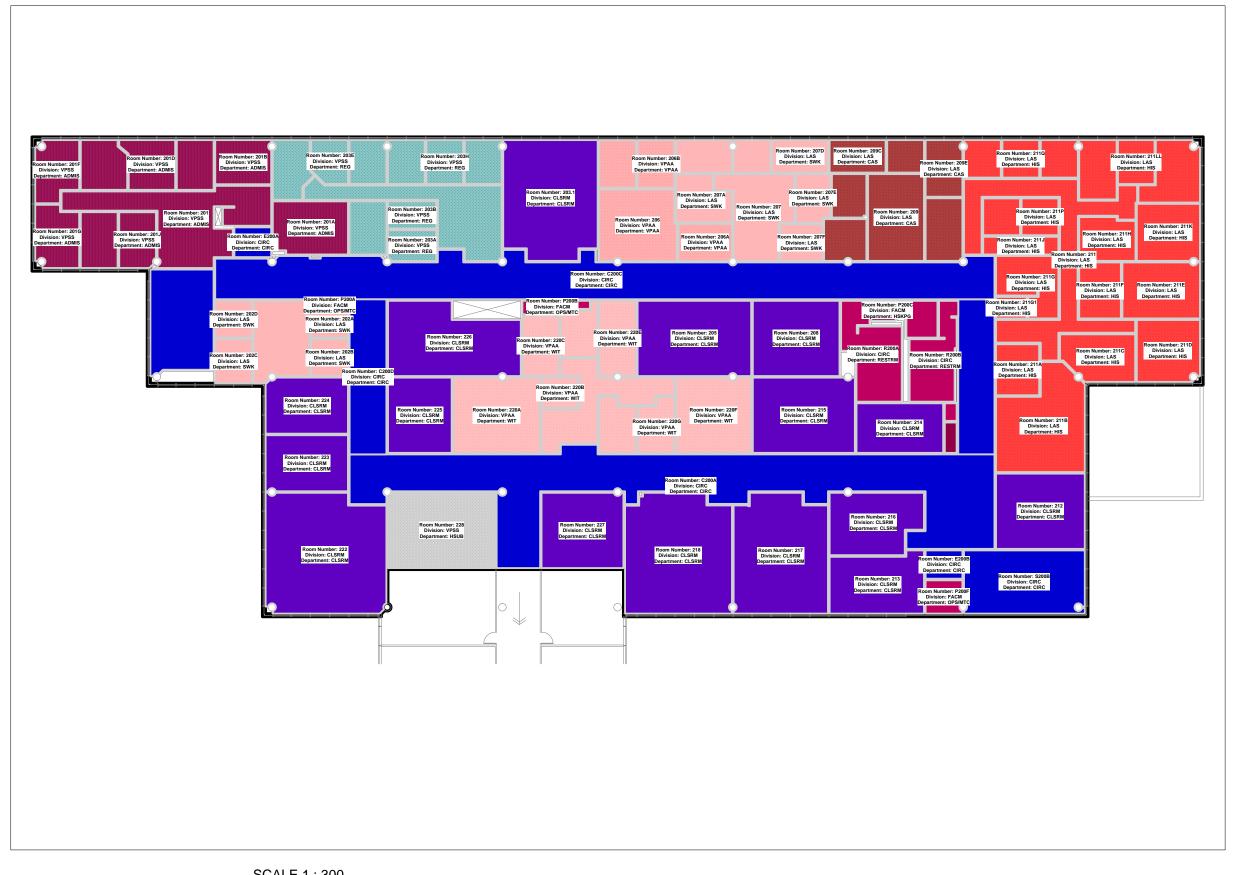


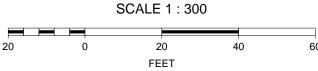


## Central Classroom - First Floor - Departments

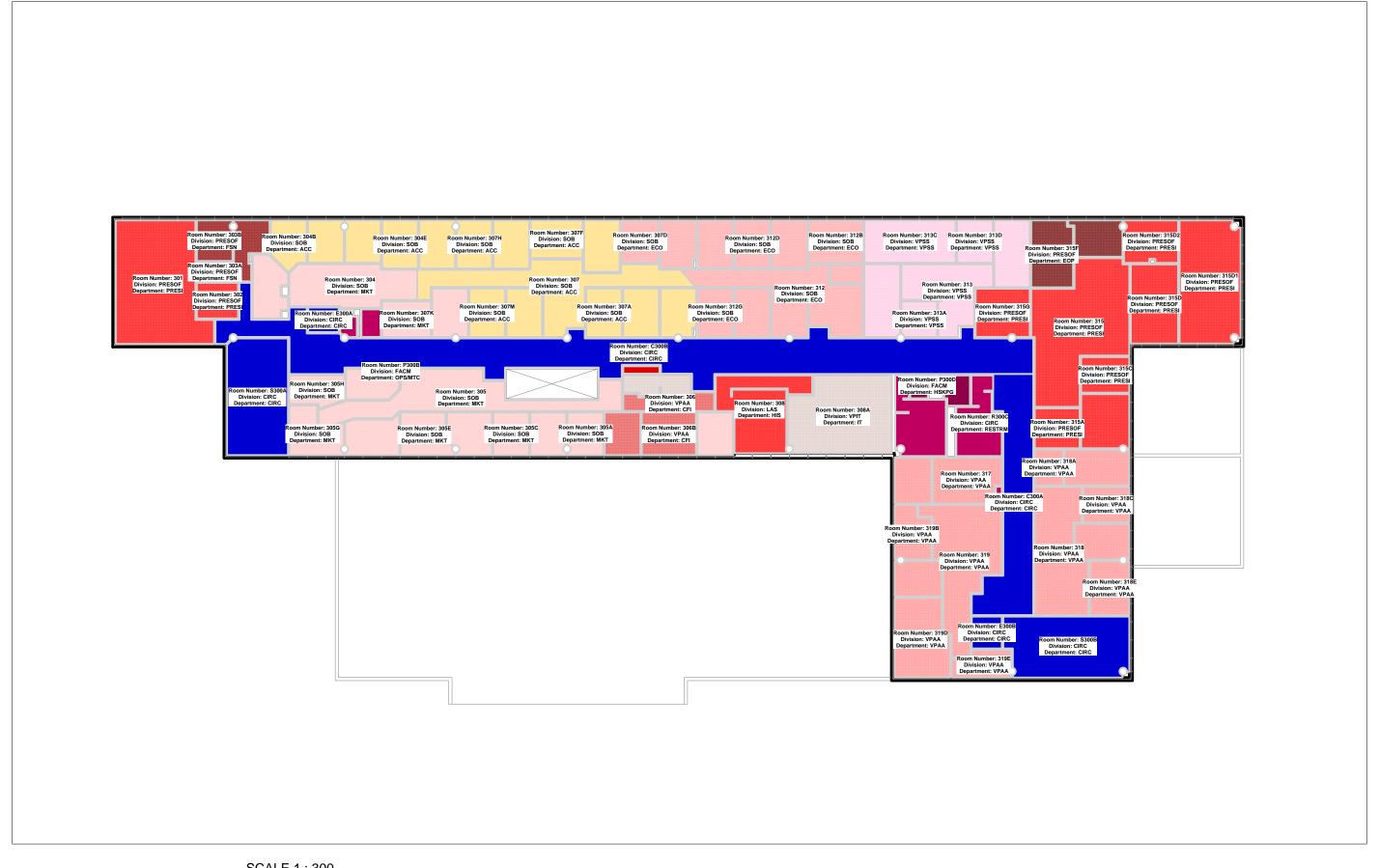


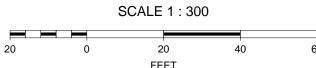
## Central Classroom - Second Floor - Departments



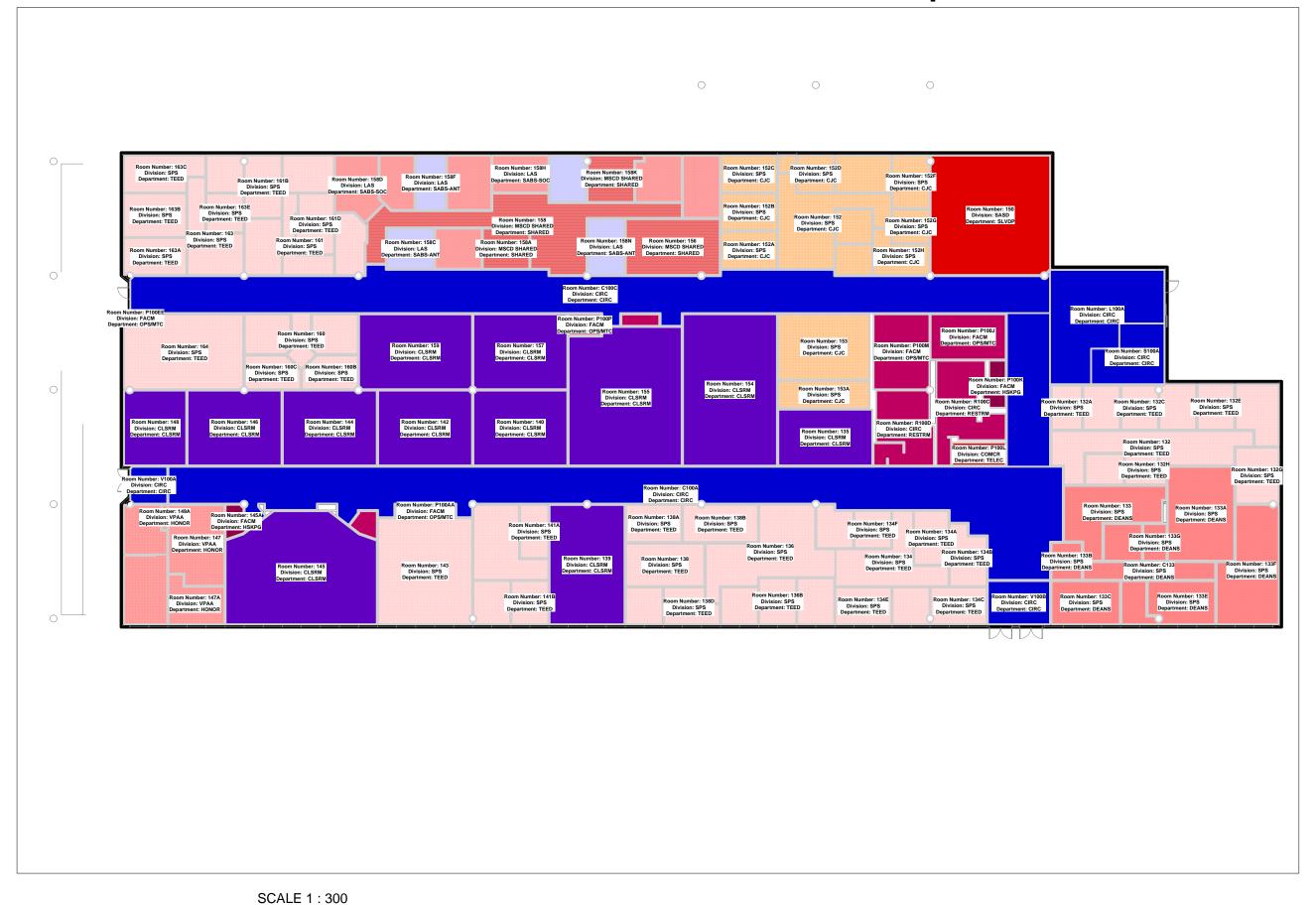


## Central Classroom - Third Floor - Departments

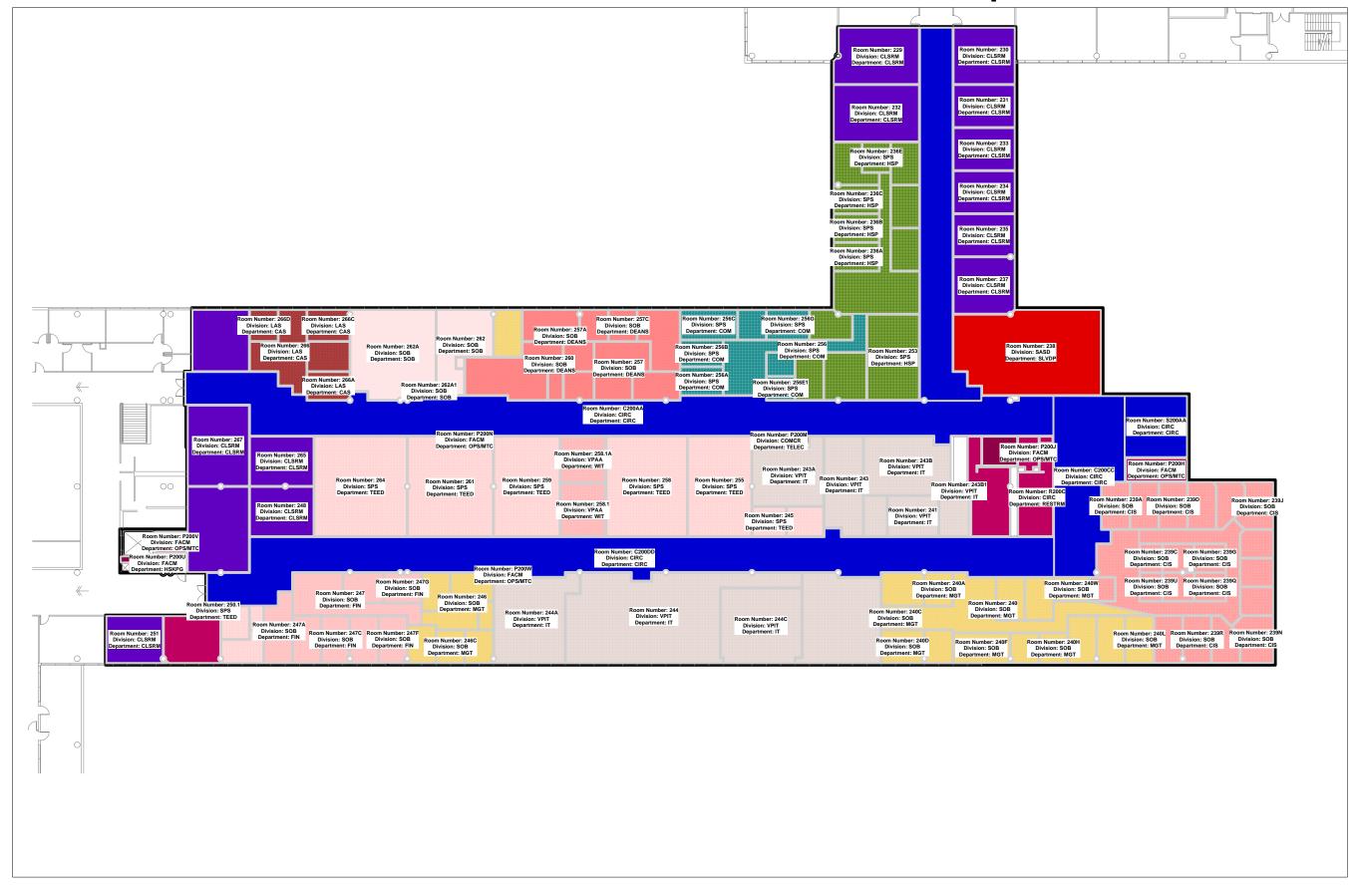


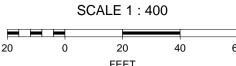


### West Classroom - First Floor - Departments



### West Classroom - Second Floor - Departments





#### **Appendix**

**EXISTING CONDITIONS ASSESSMENTS** 

# Definitions for Levels of Remodel - Mechanical and Electrical Systems Metro State College - Backfill Project

MINIMAL REMODEL
Up to 25% remodel

MINIMAL REMODEL	MODERATE REMODEL	EXTENSIVE REMODEL- A (Same Use)	EXTENSIVE REMODEL- B (Change of Use)
Up to 25% remodel	Up to 50% remodel	50-75% remodel	50-75% remodel
Same use	Same use	New ceiling grid and tile	New ceiling grid and tile
New carpet & paint	New Carpet & paint	New light fixtures	New light fixtures
Aesthetic only	50% new ceiling grid/tile	Creating fire rated corridors?	Creating fire rated corridors?
	50% new light fixtures		
MECH./PLUMBING CONSIDERATIONS	MECH./PLUMBING CONSIDERATIONS	MECH./PLUMBING CONSIDERATIONS	MECH./PLUMBING CONSIDERATIONS
None	Move diffusers/return grilles	New diffusers/return grilles to fit new ceiling tile	New diffusers/return grilles to fit new ceiling tilk
	Move zone terminal boxes	New branch ductwork w/ insulation	New branch ductwork w/ insulation
	Move thermostats	Move and/or add zone terminal boxes	Add new zone terminal boxes
	Move sprinkler heads (Admin only)	Move and/or add thermostats	Add new thermostats
		Air Test and Balance	Air Test and Balance
		Clean ductwork	Clean ductwork
		Control Sequence changes	Control Sequence changes
		Hydronic Test and Balance	Hydronic Test and Balance
		HW piping w/ insulation to new terminal	HW piping w/ insulation to new terminal
		boxes	boxes
		Add Control Points	Add Control Points
		Add F/S Dampers at new rated corridors	Add F/S Dampers at new rated corridors
		Move sprinkler heads (Admin only)	Move sprinkler heads (Admin only)
			IF offices change to classrooms:
			Increased ventilation requirements
		IF REQ'D TO MEET CURRENT CODE STDS:	IF REQ'D TO MEET CURRENT CODE STDS:
		Possible Reqmts for Current Code Compliance	Possible Regmts for Current Code Compliance
		Increased Ventilation Requirements	Increased Ventilation Requirements
		Possibility to use operable windows for credit?	Possibility to use operable windows for credit?
		Increased Outdoor Air required	Increased Outdoor Air required
		Increased Louver Size	Increased Louver Size
		Increased AHU coil capacity	Increased AHU coil capacity
		Increased Chilled Water required	Increased Chilled Water required
		Increased Hot Water required	Increased Hot Water required
		Increased Steam required	Increased Steam required
		New (larger capacity) steam to hot water converters	New (larger capacity) steam to hot water converters
		Test and Balance water	Test and Balance water
		Add/replace pipe insulation (Asbestos concerns,	Add/replace pipe insulation (Asbestos concerns,
1		Add/replace duct insulation (Asbestos concerns)	Add/replace duct insulation (Asbestos concerns;
33		Control Sequence changes	Control Sequence changes

ELECT. /FIRE ALARM CONSIDERATIONS   ELECT. /FIRE ALARM CONSIDERATIONS	ELECT. /FIRE ALARM CONSIDERATIONS	ELECT. / FIRE ALARM CONSIDERATIONS	ELECT. /FIRE ALARM CONSIDERATIONS
None	existing ceiling grid/tile	New lighting fixtures	New lighting fixtures
34	New lighting fixtures in areas with new ceiling		
	grid/tile and as necessary to meet watts/sq. ft.	New lighting controls to meet the IECC, including occupancy	New lighting controls to meet the IECC, including occupancy
	requirements for IECC	sensors, dual level switching and timeclock	sensors, dual level switching and timeclock
	occupancy sensors, dual level switching and	New branch circuiting for new lighting fixtures	New branch circuiting for new lighting fixtures
	lighting fixtures	New branch circuiting for new or relocated receptacles	New branch circuiting for new or relocated receptacles
	receptacles	Relocate smoke detectors as necessary for new room	Relocate smoke detectors as necessary for new room
	room configurations	configurations	configurations
	to meet current IBC and ADA requirements	Relocate and/or add audio visual fire alarm devices to meet	Relocate and/or add audio visual fire alarm devices to meet
	accommodate additional branch circuits	current IBC and ADA requirements	current IBC and ADA requirements
	signs	May require new electrical panelboard to accommodate additional May require new electrical panelboard to accommodate	al May require new electrical panelboard to accommodate
	Relocate or add fire alarm pull stations	branch circuits	additional branch circuits
		Relocate or add emergency battery lighting and exit signs	Relocate/add emergency battery lighting and exit signs
		Relocate or add fire alarm pull stations	Relocate or add fire alarm pull stations
		IF REQ'D TO MEET CURRENT CODE STDS:	IF REQ'D TO MEET CURRENT CODE STDS:
		Possible Regmts for Current Code Compliance replaced IT any work is done to these switchboards due to Tack of	Possible Reqmts for Current Code Compliance Possible Reqmts for Current Code Compliance replaced if any work is done to these switchboards due to lack of replaced if any work is done to these switchboards due to lack of
DATA CENTER 50-75% remodel		Add power and fire alarm monitoring of fire smoke dampers	Add power and fire alarm monitoring of fire smoke dampers

New ceiling grid and tile

New light fixtures

Creating fire rated corridors?

## INIECH./PLUINIBING CONSIDERATIONS Demo ductwork and controls

Raised flooring

Dedicated AC unit w/ humidification w/ remote cond.

Dry Fire Protection System (Admin)

Add Control Points

DCW piping to unit

Condensate piping to existing or new floor drair

## ELECI. / FIRE ALARIVI CONSIDERATIONS

New lighting fixtures

including occupancy sensors, dual level

New branch circuiting for new lighting

relocated receptacles

for new room configurations

alarm devices to meet current IBC and

accommodate additional branch circuits

Relocate or add emergency battery

Add UPS and panelboard to Data Center

#### MECHANICAL, ELECTRICAL AND PLUMBING OBSERVATIONS, ASSESSMENTS AND RECOMMENDATIONS

Note—Comments include issues specific to the Backfill project, as outlined in the body of this document, as well as issues related to base building or routine maintenance which will not be addressed as part of this project but are noted for future reference.

#### ADMINISTRATION BUILDING

#### II. Mechanical Systems Description:

#### A. Mechanical:

- 1. The buildings mechanical system consists of two VAV Air Handlers serving VAV terminal boxes with electric reheat coils. The Air Handlers located in the penthouse are connected together to form a common supply system. The Air Handlers each contain two return fans, a filter section, heating water coil, chilled water coil and two supply fans. The Air Handlers also feature air side economizers which allow the building to be cooled during moderate weather without the use of mechanical cooling based resources (i.e. chilled water).
- 2. The cooling coils in the Air Handlers are fed from a packaged air cooled chiller located on the roof. The heating coils are fed from a gas fired hot water boiler located in the penthouse.
- 3. The controls for the HVAC system are primarily DDC with the only exemption being the damper actuators and control valves for the Air Handlers which air pneumatic and fed from an air compressor in the penthouse.

#### B. Plumbing:

- 1. The buildings plumbing system consists of one 3" domestic water line entering the building on the west end, one 3" natural gas line entering on the north end, one 6" fire line entering the building on the north end, one 6" Sanitary sewer main exiting on the west end, and a 10" Storm sewer and 10" overflow lines exiting on the south end. The domestic hot water is provided from a gas fired water boiler located in the penthouse.
- 2. The existing plumbing fixtures appear to meet the 2006 International Plumbing Code (IPC).
- 3. The building is currently protected by a fire sprinkler system throughout.

#### C. Code Related Mechanical Issues:

- 1. Currently the ventilation in the building is adequate for an office building with a few classrooms according to the 2006 International Mechanical Code (IMC). Based on the ventilation provided by the Air Handlers, the building average ventilation rate is 0.14 CFM/Sq Ft. A typical office space will require approximately 0.14 CFM/Sq Ft of ventilation air. A typical classroom will require approximately 0.75 CFM/Sq Ft of ventilation air. Limited use of spaces for classroom is advised to maintain adequate ventilation levels to meet the 2006 IMC.
- 2. Current bathroom exhaust appears to be inadequate per the 2006 IMC which requires 75 CFM of exhaust per water closet or urinal. Existing drawings indicate the exhaust air flow to be approximately 31 CFM per water closet or urinal. If the bathrooms are renovated, modifications may need to be done to the bathroom exhaust to bring it up to code.
- 3. The building is currently protected with a fire sprinkler system. The interior walls do not appear to be fire rated which removes the requirement for fire dampers. Modifications to the fire sprinkler system may need to be done in areas where walls and occupancy changes. Fire and/or fire-smoke dampers may be required to be installed in any ducts that penetrate shafts or floors.

#### D. Other Related Mechanical Issues: (Some of which have been raised by the Owner.)

- 1. The recent building audit identified a large amount of infiltration into the building. Steps should be taken to seal up the envelope to maintain/improve system efficiencies. Maintenance personnel have also mentioned that the building has trouble maintaining space temperature below ten degrees Fahrenheit.
- 2. Based on the age of the building and typical equipment life expectancies, the HVAC system appears to be in working order and does not appear to need replacement at this time.

#### III. <u>Electrical Systems Description:</u>

#### A. Power:

- 1. The existing electrical distribution equipment is original to the building and is in good condition.
- 2. The building's electrical capacity is approximately 26 watts/sq. ft. with a breakdown of 5.5 watts/sq. ft. for general power, 9 watts/sq. ft for lighting, 1 watt/sq. ft for misc. and 10.5 watts/sq. ft. for mechanical loads. The overall electrical capacity for this building is more than

adequate for office and classroom spaces, and could also accommodate additional data center needs.

#### B. Lighting:

- 1. The existing lighting system including emergency egress lighting is adequate and is in good condition.
- 2. The emergency egress lighting has battery back-up.
- 3. There may be some need to provide more energy efficient lighting and appropriate lighting controls in renovated areas to meet the current International Energy Conservation Code (IECC).

#### C. Fire Alarm:

1. The existing building has an addressable fire alarm system and appears to meet the current International Building Code and Americans with Disabilities Act (ADA).

#### D. Code Related Electrical Issues:

1. There may be some need to provide more energy efficient lighting fixtures and appropriate lighting controls in renovated areas to meet the current IECC.

#### E. Other Related Electrical Issues:

1. There is an existing generator that provides emergency back-up power for the campus police/security functions, but is not utilized for life safety.

#### OBSERVATIONS, ASSESSMENTS AND RECOMMENDATIONS

#### CENTRAL CLASSROOM BUILDING

#### II. Mechanical Systems Description:

#### A. Mechanical:

- 1. The buildings mechanical system consists of three VAV Air Handlers with pneumatic VAV terminal boxes and perimeter baseboard radiation. Each floor has a dedicated Air Handler which is located in the penthouse. The Air Handlers each contain a return fan, filter section, direct evaporative cooler, chilled water coil and a supply fan. The Air Handlers also feature air side economizers which allow the building to be cooled during moderate weather without the use of mechanical cooling based resources (i.e. chilled water).
- 2. The cooling coils in the Air Handlers are fed from the campus chilled water system. The perimeter baseboard radiation is supplied with hot water from a steam to hot water convertor. The steam is supplied from the Denver District steam system.
- 3. The original control system for the HVAC equipment was all pneumatic. Parts of the pneumatic control system have been replaced with a Direct Digital Control (DDC) system to provide monitoring on the campus Building Automation System (BAS). The terminal units and the controls within the rooms are still predominantly pneumatic. The compressed air that feeds the pneumatic controls in this building is provided from a compressor in the West Classroom.

#### B. Plumbing:

- 1. The buildings plumbing system consists of one 3" domestic water line entering the building on the NW end, one 6" Sanitary sewer main exiting on the NE end, and one 15" Storm sewer exiting on the SW end. The domestic hot water is provided from a steam to hot water generator. The steam is fed from the Denver District steam system.
- 2. Existing plumbing fixtures are older high volume fixtures.

#### C. Code Related Mechanical Issues:

1. Currently the ventilation in the building is severely inadequate according to the 2006 International Mechanical Code (IMC). Based on the ventilation provided by the Air Handlers, the building average ventilation rate is 0.06 CFM/Sq Ft. The required ventilation for the building as it is now based on the 2006 IMC is 0.19 CFM/Sq Ft. Operable windows are present which are allowed to be used for

- ventilation per the 2006 IMC. However, the required opening area needs to be 4 percent of the floor area being ventilated and this method cannot be combined with mechanical ventilation to meet the 2006 IMC requirements.
- 2. Current bathroom exhaust may be adequate if bathroom groups are to remain unaltered. If the bathrooms are renovated, modifications may need to be done to the bathroom exhaust to bring it up to code.
- 3. As noted by the architect, the building lacks either fire rated corridors or a fire sprinkler system. Fire dampers or fire- smoke dampers would need to be installed in locations where ductwork penetrates the rated walls. If a fire sprinkler system is deemed more economically feasible, a new fire sprinkler water main would have to be brought in from outside the building. Fire sprinkler piping would need to be installed in every space, including those not being renovated.
- 4. As noted by the architect, the bathroom fixtures are inadequate for the occupant load. The existing domestic cold water main is currently at or close to full capacity according to the 2006 International Plumbing Code (IPC). Adding fixtures to meet current codes may require increasing or supplementing the existing domestic cold water main.

#### D. Other Related Mechanical Issues: (Some of which have been raised by the Owner.)

- 1. The cooling coils in the Air Handlers have suffered damage from freezing conditions due to cold outside air leaking into the air handlers (see comment about outside air dampers below). The maintenance staff are perpetually repairing leaks every spring during system startup. Some of these repairs have reduced the cooling capacity of the coils due to the removal of sections of fins or disconnecting pipes that have severe damage. The amount of reduced capacity is unknown but maintenance personnel have indicated that in most cases, they have been able to maintain space temperature under existing conditions.
- 2. Most of the heating and cooling system has reached the end of its serviceable life. It is recommended to be replaced at owner's convenience.
- 3. The outside air dampers in the Air Handlers are old and do not close properly. This can be part of the cause for the damage to the cooling coils as it provides a larger amount of cold air to mix with return air than what was originally design. This colder mixed air temperature can reach and exceed the freezing point of water which will cause damage to the cooling coils. This excess volume of air will also bring cooler air into the spaces than what was originally designed, causing the heating system to work harder to maintain space temperature which can be wasting energy.

- 4. Cooling capacity may not be available for added classrooms with the reduced capacity due to freezing. Adding computer labs will also require supplemental systems to handle the added cooling load.
- 5. The hot water storage tank lining is aging and pump piping needs replaced. Other equipment associated with the domestic hot water system is noted as leaking and needs to be replaced.

#### III. <u>Electrical Systems Description:</u>

#### A. Power:

- 1. The existing electrical distribution equipment is original to the building, past its useful life, and replacement parts may not be available for this equipment. In addition, the existing switchboard appears to not have adequate labeling for its short circuit rating, which may present a problem if the switchboard needs to be modified due to any renovation projects.
- 2. The existing feeder conductors for this building are aluminum, and are past their useful life. Any new feeders and branch circuits installed as part of a renovation project should be copper.
- 3. The building's electrical capacity is approximately 10 watts/sq. ft. with a breakdown of 3.5 watts/sq. ft. for general power, 3.2 watts/sq. ft for lighting and 3.3 watts/sq. ft. for mechanical loads. The overall electrical capacity for this building is probably adequate for office space and classrooms not wired for computers. The electrical distribution would have to be modified by adding more step-down transformers and branch circuit panel boards to accommodate any renovation.

#### B. Lighting:

- 1. The majority of the existing lighting fixtures are 20" X 60" to match the existing ceiling tile sizes, and would need to be replaced in areas where the ceilings were replaced.
- 2. The existing lighting system is controlled by low voltage relay panels and switches.
- 3. Another concern about the existing lighting system is whether it would meet the current International Energy Conservation Code (IECC).

  Most likely it would not and any areas renovated would have to be updated with new energy efficient lighting.
- 4. The existing emergency/egress lighting systems including exit signage appears to be inadequate in locations and foot candle levels, and most likely does not meet current International Building Code (IBC) requirements. In addition, it is not completely clear whether all emergency lighting in the building has battery back-up.

#### C. Fire Alarm:

1. The existing building is fully detected, which is probably due to the lack of a fire protection sprinkler system. The issue of fire protection should be investigated regarding any building renovations. The fire alarm control panel was replaced approximately 10 years ago and appears to be in good working order.

#### D. Code Related Electrical Issues:

- 1. The existing lighting system utilizes a modular wiring system that may not meet the current National Electrical Code.
- 2. The existing lighting system may not meet the current IECC. Therefore, any areas renovated would have to be updated with new energy efficient lighting fixtures and appropriate lighting controls.
- 3. The existing emergency/egress lighting systems including exit signage appears to be inadequate in locations and foot candle levels, and most likely does not meet current IBC requirements. In addition, it is not completely clear whether all emergency lighting in the building has battery back-up.

#### E. Other Related Electrical Issues:

1. The existing lighting system is controlled by low voltage relay panels and switches that are not reliable or desired by facility personnel.

#### OBSERVATIONS, ASSESSMENTS AND RECOMMENDATIONS

#### WEST CLASSROOM BUILDING

#### II. Mechanical Systems Description:

#### A. Mechanical:

- 1. The buildings mechanical system consists of two VAV Air Handlers with pneumatic VAV terminal boxes and perimeter baseboard radiation. Each floor has a dedicated Air Handler which is located in the penthouse. The Air Handlers each contain a return fan, filter section, direct evaporative cooler, chilled water coil and a supply fan. The Air Handlers also feature air side economizers which allow the building to be cooled during moderate weather without the use of mechanical cooling based resources (i.e. chilled water).
- 2. The cooling coils in the Air Handlers are fed from the campus chilled water system. The perimeter baseboard radiation is supplied with hot water from a steam to hot water convertor. The steam is supplied from the Denver District steam system.
- 3. The original control system for the HVAC equipment was all pneumatic. Parts of the pneumatic control system have been replaced with a Direct Digital Control (DDC) system to provide monitoring on the campus Building Automation System (BAS). The terminal units and the controls within the rooms are still predominantly pneumatic. The compressed air that feeds the pneumatic controls in this building is provided from a compressor in the West Classroom.

#### B. Plumbing:

- 1. The buildings plumbing system consists of one 3" domestic water line entering the building on the NW end, one 6" Sanitary sewer main exiting on the SW end, and one 15" Storm sewer exiting on the NE end. The domestic hot water is provided from a steam to hot water generator. The steam is fed from the Denver District steam system.
- 2. Existing plumbing fixtures are older high volume fixtures.

#### C. Code Related Mechanical Issues:

1. Currently the ventilation in the building is severely inadequate according to the 2006 International Mechanical Code (IMC). Based on the ventilation provided by the Air Handlers, the building average ventilation rate is 0.09 CFM/Sq Ft. The required ventilation for the building as it is now based on the 2006 IMC is 0.35 CFM/Sq Ft. Operable windows are present which are allowed to be used for

- ventilation per the 2006 IMC. However, the required opening area needs to be 4 percent of the floor area being ventilated and this method cannot be combined with mechanical ventilation to meet the 2006 IMC requirements.
- 2. Current bathroom exhaust may be adequate if bathroom groups are to remain unaltered. If the bathrooms are renovated, modifications may need to be done to the bathroom exhaust to bring it up to code.
- 3. As noted by the architect, the building lacks either fire rated corridors or a fire sprinkler system. Fire dampers or fire- smoke dampers would need to be installed in locations where ductwork penetrates the rated walls. If a fire sprinkler system is deemed more economically feasible, a new fire sprinkler water main would have to be brought in from outside the building. Fire sprinkler piping would need to be installed in every space, including those not being renovated.
- 4. As noted by the architect, the bathroom fixtures are inadequate for the occupant load. The existing domestic cold water main is currently at or close to full capacity according to the 2006 IPC. Adding fixtures to meet current codes may require increasing or supplementing the existing domestic cold water main.

#### D. Other Related Mechanical Issues: (Some of which have been raised by the Owner.)

- 1. The cooling coils in the Air Handlers have suffered damage from freezing conditions due to cold outside air leaking into the air handlers (see comment about outside air dampers below). The maintenance staff are perpetually repairing leaks every spring during system startup. Some of these repairs have reduced the cooling capacity of the coils due to the removal of sections of fins or disconnecting pipes that have severe damage. The amount of reduced capacity is unknown but maintenance personnel have indicated that in most cases, they have been able to maintain space temperature under existing conditions.
- 2. Most of the heating and cooling system has reached the end of its serviceable life. It is recommended to be replaced at owner's convenience.
- 3. The outside air dampers in the Air Handlers are old and do not close properly. This can be part of the cause for the damage to the cooling coils as it provides a larger amount of cold air to mix with return air than what was originally design. This colder mixed air temperature can reach and exceed the freezing point of water which will cause damage to the cooling coils. This excess volume of air will also bring cooler air into the spaces than what was originally designed, causing the heating system to work harder to maintain space temperature which can be wasting energy.

- 4. Cooling capacity may not be available for added classrooms with the reduced capacity due to freezing. Adding computer labs will also require supplemental systems to handle the added cooling load.
- 5. The hot water storage tank lining is aging and pump piping needs replaced. Other equipment associated with the domestic hot water system is noted as leaking and needs to be replaced.

#### III. <u>Electrical Systems Description:</u>

#### A. Power:

- 1. The existing electrical distribution equipment is original to the building and is past its useful life. Replacement parts may not be available for this equipment. In addition, the existing switchboard appears to not have adequate labeling for its short circuit rating, which may present a problem if the switchboard needs to be modified due to any renovation projects.
- 2. The existing feeder conductors for this building are aluminum, and are past their useful life. Any new feeders and branch circuits installed as part of a renovation project should be copper.
- 3. The building's electrical capacity is approximately 11.5 watts/sq. ft. with a breakdown of 3.5 watts/sq. ft. for general power, 4.7 watts/sq. ft for lighting and 3.3 watts/sq. ft. for mechanical loads. The overall electrical capacity for this building is probably adequate for office space and classrooms not wired for computers. The electrical distribution would have to be modified by adding more step-down transformers and branch circuit panel boards to accommodate any renovation.

#### B. Lighting:

- 1. The majority of the existing lighting fixtures are 20" X 60" to match the existing ceiling tile sizes, and would need to be replaced in areas where the ceilings were replaced.
- 2. The existing lighting system is controlled by low voltage relay panels and low voltage switches.
- 3. Another concern about the existing lighting system is whether it would meet the current International Energy Conservation Code (IECC).

  Most likely it would not and any areas renovated would have to be updated with new energy efficient lighting.
- 4. The existing emergency/egress lighting systems including exit signage appears to be inadequate in locations and foot candle levels, and most likely does not meet current International Building Code (IBC) requirements. In addition, it is not completely clear whether all emergency lighting in the building has battery back-up.

#### C. Fire Alarm:

1. The existing building is fully detected, which is probably due to the lack of a fire protection sprinkler system. The issue of fire protection should be investigated regarding any building renovations. The fire alarm control panel was replaced approximately 10 years ago and appears to be in good working order.

#### D. Code Related Electrical Issues:

- 1. The existing lighting system utilizes a modular wiring system that may not meet the current National Electrical Code.
- 2. The existing lighting system may not meet the current IECC. Therefore, any areas renovated would have to be updated with new energy efficient lighting fixtures and appropriate lighting controls.
- 3. The existing emergency/egress lighting systems including exit signage appears to be inadequate in locations and foot candle levels, and most likely does not meet current IBC requirements. In addition, it is not completely clear whether all emergency lighting in the building has battery back-up.

#### E. Other Related Electrical Issues:

1. The lighting system is controlled by low voltage relay panels and switches that are not reliable or desired by facility personnel.

#### **ARCHITECTURAL**

#### OBSERVATIONS, ASSESSMENTS AND RECOMMENDATIONS

#### I. ADMINISTRATION BUILDING:

#### A. Site:

- 1. The Administration Building is located in the southwest quadrant of the Auraria Higher Education Campus, generally near the intersection of Lawrence Way and 7<sup>th</sup> Street in Denver, Colorado.
- 2. The topography of the site is generally flat, with a gentle slope downward to the north. The first floor building entrances are at street level. The main entrance is on the south side, adjacent to a light rail station. A secondary public entrance is on the northeast corner of the building and a service entrance is on the northwest corner of the building.
- 3. The site features a typical campus streetscape, sidewalks and mature landscaping.

#### B. General Building Description:

- 1. The building, constructed in 1999, is five stories in height and contains a total of 126,772 gross square feet. It was designed primarily for classroom and lounge/study usage on the first floor, with general office functions accommodated on the second through the fifth floors. However, minor classroom and conference spaces do currently occur on some of the upper floors as well. The net assignable square feet is approximately 94,450 s.f.
- 2. The structure was constructed using structural steel frame and poured-in-place concrete floor. The structural system appears to be in generally good condition, with only minor shrinkage cracking on the concrete floors.
- 3. The exterior of the building consists of brick spandrel panels, precast concrete trim and continuous aluminum storefront windows at the each floor. Doors and sidelights are dark colored anodized aluminum.
- 4. Interior walls are predominately painted drywall over metal studs.
- 5. Flooring generally consists of terrazzo in the lobby, and vinyl tile or carpet as applicable in other areas. Flooring base is four inch resilient cove base. Flooring in the building appears to be in relatively good condition considering the age of the building and heavy usage. Some areas are beginning to show wear.
- 6. Ceilings in public areas and offices are suspended acoustical tile with exposed T-grid suspension system.

- 7. Due to the buildings recent construction, it is thought that asbestos or other contaminates would not be present. Verification by an environmental consultant would be prudent.
- 8. Interior doors are naturally stained solid core wood. Door frames and sidelights are dark colored anodized aluminum. Neither the doors nor the frames bear the a fire label due to the fact that the building is equipped with an automatic fire sprinkler system and rated corridors are not required. Glass in the doors and sidelights is clear safety glass. Interior doors and frames at stairwells and elevator lobbies are rated.
- 9. The building is only 10 years old and the door hardware initially installed appears to comply with current codes and ADA standards.
- 10. The building is equipped with an automatic fire sprinkler system and fire alarm system.

#### C. Building Exterior:

- 1. The exterior of the building is comprised of dark red brick spandrel panels, buff colored precast concrete trim and continuous dark colored anodized aluminum windows. None of the exterior windows are operable for ventilation.
- 2. Glazing appears to be tinted double pane insulating glass.
- 3. Building doors and sidelight entrances are dark colored anodized aluminum. Pushbutton actuated handicapped accessible devices are present at public entrances.

#### D. Building Code Analysis:

1. The building would originally have been designed and constructed under the 1997 Uniform Building Code. The 1997 UBC was the last code written by the International Conference of Building Officials (ICBO) prior to the advent of the development of the current model code known as the International Building Code (IBC). The 1997 UBC was very similar to the current IBC family of codes with respect to life safety issues. The following are the assumed Code classifications, applying the features of the existing building with the currently applicable 2006 IBC:

Occupancy: Group B (Educational occupancies above the 12<sup>th</sup> grade)

Const. Type: Type I-A Bldg. Area: Unlimited Bldg. Height: Unlimited

Struct. Frame: 3 Hours (Concrete columns and beams)
Floor/Ceiling: 2 Hours (Composite concrete floors)
Roof/Ceiling: 2 Hours (Composite concrete roof)
Ext. Walls 0 Hours (Setback – Table 602)

Shaft Encl. 2 Hours

Partitions: 0 Hour (Interior non-load bearing)

Corridors: 0 Hour

Sprinklers: Bldg. is equipped with an automatic sprinkler system.

#### 2. Code Related Issues:

- a. Base on IBC Table 1017.1, corridor walls are not required to be fire rated due to the sprinkler system. While the materials used in the construction of the walls, that being metal studs and drywall, the actual fire rating of the walls would be considered as zero. Therefore, the corridor openings consisting of doors, frames and hardware need not be fire rated as well.
- b. Fire department standpipes and hose cabinets are provided in corridors immediately adjacent to the entrance into each stairwell on each floor. They are located in a manner so that all portions of the building can be reached by a 30' nozzle stream on the end of a 100' house per IBC Section 905.
- c. The IBC Code requires vertical shaft enclosures to be two-hour fire rated and mechanical/electrical spaces to be one-hour fire rated. A thorough investigation should be conducted to determine if any renovation work has occurred in the building since the original 1999 construction that created new shafts or penetrations of existing walls or floors by ducts, pipes or conduits. Said penetrations would need to be repaired and/or fire caulked.
- d. Existing handrails and guardrails appear to comply with current code. Handrails extend 12" beyond the top and bottom risers of stair runs. Guardrails are 42" high and the space between the balusters is the required 4".
- e. Care should be taken in future plans to modify building usage or primary functions based on limitations of existing building components. As previously stated, upper floors in the building were originally designed to predominantly accommodate office functions. Changing the use from office to classroom will have a dramatically influence on building components such as corridors, stairs, plumbing fixtures and so forth.
- f. General classrooms currently occupy the east half of the first floor. The main corridor in that area is of the proper width to accommodate the occupant loads resulting from the number and size of the classrooms provided. That corridor leads to exits in the lobby and the northeast corner of the building.
- g. Corridors on the second through the fifth floors are primarily 5' in width. The maximum occupant load a corridor of that width will accommodate is 400 at any given point (60" x 0.15" per occupant in sprinkled bldg.). One could assume a total occupant load of 800 by assuming 400 in one direction and 400 in the opposite direction, however, floors 3 through 5 only have two means of egress provided in the two existing stairwells. IBC Table 1019.1 restricts

- the total occupant load per floor or building area to 500 when only two exits are provided.
- h. The two enclosed stairwells have treads that are only 48" wide. They will only accommodate 240 persons each (48" x 0.2" per occupant in a sprinkled bldg.). There is a single 36" wide door from the corridor into the stairwells that will also only accommodate 240 (36" x 0.15"). Therefore, the maximum occupant load on floors 3 through 5 is 480 persons.
- i. It is recommended that any future classrooms added in the building be located on the first or second floor. The second floor has a third stair that leads down to the first floor in the open, two story lobby. The presence of a third means of egress would allow the maximum occupant load on second floor to go up to 1,000, however, the total tread widths between the 3 stairs is 156", which limits the actual occupant load to 780. The third stair is relatively close to one of the enclosed stairwells but would still count as the third means of egress based on IBC paragraph 1015.2.2. If classrooms are added on this floor, the width of corridors leading to the three stairs may need to be increased to accommodate the additional occupant load created thereby.
- j. The existing restrooms and the number of toilet fixtures appear to have been sized to only accommodate office occupant loads on the second through the fifth floors. If classrooms are added on any of those floors, restrooms will need to be enlarged or other restrooms added.
- k. The building has exits are located on each floor so as to provide a travel distance, measured from the most remote point within each story, to be within the maximum distance of 300 feet in a sprinkled building.
- 1. The building appears to have adequate coverage of portable fire extinguishers. Extinguisher cabinets are located in the corridors.
- m. Elevator smoke vestibules are provided at floor levels two through five and are equipped with automatic closing doors that are held open by magnetic door devices connected to the fire alarm system.

#### E. Vertical Transportation:

1. The building has two 3,500 lb. passenger elevators and one 4,500 lb. "freight" elevator that can be used by passengers. If any future classrooms are added only on the second floor, the current elevator capacity should be adequate for current loads.

#### F. Americans with Disabilities Act:

- 1. The building is relatively new and is generally in compliance with the ADA. Exterior doors have push button actuated swing doors for disabled persons. [Photo No. 27].
- 2. The public restrooms have fixtures, accessories, toilet partitions of the dimensional spacing required by ADA. [Photo No. 32].
- 3. Interior doors have lever handled hardware on all openings.
- 4. Signage appears to comply with ADA requirements.
- 5. Elevators are available for access to upper floors.

#### II. CENTRAL CLASSROOM BUILDING:

#### A. Site:

- 1. The Central Classroom Building is located in the southeast quadrant of the Auraria Higher Education Campus, generally near the intersection of Colfax Avenue and Speer Blvd. in Denver, Colorado.
- 2. The building is sited adjacent to, as well as being connected at the Second Floor Level, to the West Classroom Building to the west.
- 3. The topography of the site is generally flat, with a gentle slope downward to the north. The building entrances are at street level and provide accessible means of egress by campus sidewalks or ramps.
- 4. The site features a typical campus streetscape, sidewalks and mature landscaping.

#### B. General Building Description:

- 1. The building, constructed in 1975, contains a total of 85,109 gross square feet, accommodating general classrooms and faculty offices. Portions of the buildings are two story in height on the northwest side and three stories in height on the east and south sides.
- 2. The structure was constructed using poured-in-place concrete foundations, columns and floor and roof systems. The structural system appears to be in generally good condition, with no obvious signs of settling or cracking.
- 3. The exterior of the building consists of brick spandrel panels and continuous windows at the first and second floors. Doors and sidelights and the three exterior entrances are constructed of painted hollow metal frames and doors.
- 4. Interior walls are primarily painted drywall over metal studs. The walls, including corridor walls, only extend to the ceiling system. This condition poses a sound transmission problem between rooms, as well as a building code and life safety problem that will be addressed later in the report.
- 5. Flooring generally consists of vinyl tile in classrooms and corridors, with carpet being utilized in office areas. Flooring base in public areas consists of four inch resilient base. Floors in the restrooms are poured epoxy with coved base. Flooring in the building appears to be in relatively good condition considering the age of the building and heavy usage. Some areas are beginning to show wear.
- 6. Ceilings throughout the building are outdated 20" x 60" suspended acoustical tile with exposed T-grid. The tiles are generally dirty and a few are stained, cracked or broken. Replacement tiles and grid components are reportedly difficult to obtain. Existing and/or future light fixtures and HVAC diffusers must be compatible with the unusual size of grid pattern.

- 7. Due to the age of the building, the flooring, ceiling tiles, drywall compounds, paint and other building materials may contain asbestos or other contaminates. An environmental study should be conducted to determine the presence of same. Remediation would be required prior to any renovation efforts.
- 8. Interior doors are plastic laminate clad solid core wood. Frames are hollow metal. Neither the doors nor the frames do bear the code required 20 minute fire-resistive labels at most corridor openings. Window lites in the doors, however, are glazed with wire glass. Interior windows occur between the corridor and certain classrooms. They are wire glass in hollow metal frames.
- 9. Some of the classroom/corridor doors consist of a pair of doors, with the active leaf being 36" wide and the inactive leaf being 18" wide. The inactive leaf has top and bottom flush bolts. Further investigation should be conducted to see if the door configuration and the existing hardware would comply as a 20 minute fire rated assembly.
- 10. Hardware on interior doors includes lever handled mortise locksets and closers at most classroom/corridor openings. Other doors in random locations do not have lever handles or closers. Sound seals and door bottoms have been installed on most classroom doors to control noise from the corridors. These seals also double as the required smoke seals on rated doors where they occur, however, not all corridor openings have them. A complete review of all interior hardware should be done and efforts made to bring the building up to code and ADA standards.
- 11. The building is served by the central campus steam and chilled water systems for heating and cooling. It has an outdated fire alarm system and is not equipped with an automatic fire sprinkler system.

#### C. Building Exterior:

- 1. The exterior of the building is comprised of dark red brick spandrel panels and continuous metal windows. Operable hopper vents are provided for manual ventilation.
- 2. The window system appears to be black anodized aluminum window components assembled in a continuous ribbon of windows. The window system reportedly leaks water and air. Operable windows in a public building also make it difficult for the HVAC system to function properly. Glazing appears to be single pane glass with tinting film applied to the inside of the glass, thus they are not very energy efficient.
- 3. Building entrances are painted hollow metal doors and frames with wire glass. The entrances have handicapped accessible pushbutton devices for automatic opening.

4. The soffits under the second floor connection to the adjacent West Classroom Building is of drywall or plaster construction and is in need of repair.

# D. Building Code Analysis:

1. The building would originally have been designed and constructed under the 1973 Uniform Building Code. Codes during that era were not as strict as the current International Building Code with respect to life safety issues. The following are the assumed Code classifications, applying the features of the existing building with the currently applicable 2006 IBC:

Occupancy: Group B (Educational occupancies above the 12<sup>th</sup> grade)

Const. Type: Type I-A Bldg. Area: Unlimited Bldg. Height: Unlimited

Struct. Frame: 3 Hours (Concrete columns and beams)
Floor/Ceiling: 2 Hours (Composite concrete floors)
Roof/Ceiling: 2 Hours (Composite concrete roof)
Ext. Walls 0 Hours (Setback – Table 602)

Shaft Encl. 2 Hours (Bldg. does not comply – See Issues below)

Partitions: 0 Hour (Interior non-load bearing)

Corridors: 1 Hour (Bldg. might not comply – See Issues below)
Sprinklers: Bldg. is not equipped with an automatic sprinkler system.

#### 2. Code Related Issues:

- a. Interior walls on the first floor extend to the bottom of the second floor structure above, resulting from a previous renovation project several years ago. The second and third floors were not renovated at that time and remain as originally constructed in 1975. Similar to the West Classroom Building, the interior walls only extend to the non-rated suspended acoustical ceiling system, thereby creating a sound transmission problem between rooms, as well as not provide the code required one-hour fire-rated corridor wall and ceiling envelope as a protected means of egress.
- b. IBC paragraph 3403.1 stipulates that additions or alterations to any existing building or structure shall comply with the requirements of the code for new construction. Conversely, portions of existing buildings not altered and not affected by the alteration are not required to comply with the requirements of the code for new construction. The Owner should consult with their code reviewing agency as to the extent of code compliance required in areas of the building being renovated, based on minor upgrades (interior finishes only), moderate renovation and/or extensive interior construction.

- c. Should the code reviewing agency determine that basic egress and life safety components must be upgraded, the issue of fire rated corridors must be addressed. To establish the required egress envelope, existing corridor walls on the second and third floors must be extended to the floor or roof structure above. Further, existing door and frames occurring in corridor walls on those floors do not bear the required U.L. labels. Doors, frames and hardware will have to be replaced with new rated assemblies unless one of the following alternatives is not taken. Any penetrations through the corridor walls, such as pipes, ducts, etc. would have to be fire dampered and/or fire caulked.
- d. The first alternative to replacing the corridor doors, frames and hardware with new assemblies would be to have a representative from Underwriters Laboratories visit the site to determine if the basic materials used in the existing doors and frames would comply with the requirements of the code. If they are determined to be salvageable, the missing hardware such as closers, smoke seals and door bottoms would need to be installed. Subsequently, the Underwriters Laboratories technician would have to again visit the building and apply the required 20 minute fire labels.
- e. A second alternative would be to conduct a cost/benefit analysis of installing an automatic fire sprinkler system throughout the building. As noted in IBC Table 1017.1, the required one-hour fire rating for corridors changes to zero-hours in a building with a sprinkler system. It should be noted, per IBC Section 903, that Group B buildings of this size are not required to have automatic fire sprinkler systems unless they exceed 55 feet in height from ground level to the highest floor level. In order to install a sprinkler system, the existing ceilings would undoubtedly have to be replaced throughout the building. The sprinkler system solution should only be entertained if it is determined to have a greater cost benefit than satisfying other code issues in a different manner.
- f. The second and third floors of Central are served by stairwells at the southwest and northwest corner of the building. These stairwells are enclosed full height and have fire rated doors between the stairs and the corridors leading thereto. The doors and frames are hollow metal and the have closers and panic devices. However, smoke seals are not present at this time and should be added.
- g. Fire department standpipes and hose cabinets should be installed at stairs and located intermittently throughout the building so all portions of the building can be reached by a 30' nozzle stream on the end of a 100' house per IBC Section 905.
- h. The current IBC Code requires vertical shaft enclosures to be one-hour fire rated. The 1973 UBC also required shaft enclosures to be two-hour fire rated. However, since vertical shafts tend to be

- concealed, a more extensive survey should be conducted to determine that the extent and integrity of any shaft enclosures were constructed and have been maintained of the life of the building. Any penetrations in the enclosures must be repaired and fire caulked.
- i. Fire ratings of mechanical and electrical closets must be a minimum of one-hour. Numerous penetrations of existing walls by ducts, pipes and conduit were observed. Said penetrations must be repaired and fire caulked.
- j. Some of the doors occurring in corridor walls have had floor stops installed on them to manually prop them open. In other locations, rubber wedge floor stops were in use by staff. Other locations were observed using a chair to prop the door open. It is assumed this practice was being used to control the temperature with the classroom or office. This practice violates the building code in that corridor doors should have closers and the doors should generally remain in the closed position to maintain the code required fire separation.
- k. The Central Classroom Building is connected at the second floor to the West Classroom Building to the west. The West Classroom Building is then connected to the Arts Classroom Building to the north. Fire separation walls and rated fire doors are not provided between the three buildings to isolate fire migration and/or smoke infiltration between the buildings. Thus, for code classification, the three buildings would be considered one large building. As noted in the Code Analysis above, the total allowable area for a Group B, Type I-A building is unlimited. Therefore, fire separation walls are not required between buildings. However, if improvements are implemented for corridor walls/openings and/or sprinklers in West and Central and not in the Arts Building, a separation wall should be installed across the entire north end of West as described in the West Classroom Building report.
- 1. Any modifications in functional usage in the building that would change the total occupant load per floor must comply with IBC Table 1019.1. This Table governs the number of exits required for a given occupant load. It requires two exits be provided for occupant loads up to 500, three exits for occupant loads from 501 to 1,000 and 4 exits for occupant loads above 1,000. Since the third floor only has two exits (stairwells), the total occupant load must be held to 500 or less. The second floor has the two stairwells plus the bridge leading to West, which allows the occupant load to increase to 1,000 on that floor. The first floor also has three exterior exits so the occupant load must remain under 1,000 on that floor.
- m. The existing handrails and guardrails do not comply with current code. Most handrails do not extend 12" beyond the top and bottom

- risers of a stair run. Guardrails are only 38" high rather than the required 42" and the space between the balusters is 8" rather than the required 4". Further, there are open spandrel beams in the stairwells that only have a single railing to restrict access to same.
- n. The corridor widths appear to be adequate for the anticipated occupant loads. Corridors on the second and third floor are 9' wide. A corridor that is 9' wide will accommodate 540 persons in an un-sprinkled building at the rate of 0.2" per occupant per IBC Table 1005.1. Corridors on the first floor are much wider.
- o. The current total width of exterior door openings at the first floor is 360", which is equal to 1,800 occupant load and will more than accommodate the maximum total of 1,000 persons allowed due to only having three exit locations at the first floor. The total exit width of doors into the stairwells on the second and third floors is 144" which will accommodate at total of 720 persons per floor.
- p. The stair treads in each stairwell are 72" wide, which will accommodate 239 persons each at a rate of 0.3" per occupant. This would restrict the total occupant load on the third floor to only 478 persons. Adding sprinklers to the building would increase the exit capacity of the stairs to 360 each but the fact that there are only two exits would still restrict the occupant load for the third floor to 500. Note: IBC 1004.4 indicates the exit capacity (corridors, stairs, doors, etc.) only needs to accommodate that given floor as long as the exit capacity does not decrease as it progresses toward the exits leading to the exterior.
- q. The total number of toilet fixtures does not appear to meet the required fixture counts outlined in Table 2902.1 for Group B occupancies. Even using the less restrictive category of Group E (Education), the existing fixture counts fall short. As an example, there are only four water closets in the women's restroom on the second floor, which would accommodate only 150 at the rate of 25 persons per closet for the first 50 and then 50 persons per closet above that. If classrooms are added on this floor, and possible others, the population increase may dictate additional fixtures. A complete review of fixture counts should be conducted to determine if capacities need to increase based on anticipated occupant loads.
- r. The building appears to have adequate coverage of portable fire extinguishers. Extinguisher cabinets are located in the corridors
- s. Some of the current signage does not comply with ADA standards.

#### E. Vertical Transportation:

1. The Central Classroom Building has two passenger elevators which seems adequate to meet the needs of the building. Elevator vestibules are not required on building having three levels or less. Note: The

elevators in this building also serve the needs of the West Classroom Building as described in the report for that building.

#### F. Americans with Disabilities Act:

- 1. The building is generally in compliance with the ADA, with certain exceptions. Accessible routes from the campus into the building are present at each entrance. Exterior doors have accessible push button actuated swing doors for the handicapped.
- 2. The public restrooms have fixtures, accessories, toilet partitions and most of the dimensional spacing required by ADA. However, the accessible stalls are only 48" wide and 66" deep. [Photo No. 19]
- 3. Interior doors have lever handled hardware on most openings. Those doors not having appropriated hardware should be updated.
- 4. Some of the existing signage does not comply with ADA requirements.

### III. WEST CLASSROOM BUILDING:

#### A. Site:

- 1. The West Classroom Building is located in the southeast quadrant of the Auraria Higher Education Campus, generally near the intersection of Colfax Avenue and Speer Blvd. in Denver, Colorado.
- 2. The West Classroom Building is sited adjacent to, as well as being connected at the Second Floor Level, to the Central Classroom Building to the east and the Arts Classroom Building to the north.
- 3. The topography of the site is generally flat, with a gentle slope downward to the north. The first floor building entrances are at street level on the southeast corner and west sides of the building. There are two north entrances that occur under the bridge connection of the second floor that connects to the Arts Building, which are accessed by steps and an accessible ramp leading from the surrounding street and sidewalk level up to the First Floor level.
- 4. The site features a typical campus streetscape, sidewalks and mature landscaping.

# B. General Building Description:

- 1. The building, constructed in 1975, is two stories in height and contains a total of 86,573 gross square feet, accommodating general classrooms and faculty offices.
- 2. The structure was constructed using poured-in-place concrete foundations, columns and floor and roof systems. The structural system appears to be in generally good condition, with no obvious signs of settling or cracking.
- 3. The exterior of the building consists of brick spandrel panels and continuous windows at the first and second floors. Doors and sidelights and the four exterior entrances are constructed of painted hollow metal frames and doors. Two of the entrances have motion-activated sliding doors apparently installed to facilitate easier movement in and out of the building.
- 4. Interior walls are primarily painted drywall over metal studs. Walls, including corridor walls, only extend to the ceiling system. This condition poses a sound transmission problem between rooms, as well as a building code and life safety problem that will be addressed later in the report.
- 5. Flooring generally consists of vinyl tile in classrooms and corridors, with carpet being utilized in office areas. Flooring base in public areas consists of four inch resilient base. Floors in the restrooms are poured epoxy with coved base. Flooring in the building appears to be in relatively good condition considering the age of the building and heavy usage. Some areas are beginning to show wear.

- 6. Ceilings throughout the building are outdated 20" x 60" suspended acoustical tile with exposed T-grid. The tiles are generally dirty and a few are stained, cracked or broken. Replacement tiles and grid components are reportedly difficult to obtain. Existing and/or future light fixtures and HVAC diffusers must be compatible with the unusual size of grid pattern.
- 7. Due to the age of the building, the flooring, ceiling tiles, drywall compounds, paint and other building materials may contain asbestos or other contaminates. An environmental study should be conducted to determine the presence of same. Remediation would be required prior to any renovation efforts.
- 8. Interior doors are plastic laminate clad solid core wood. Frames are hollow metal. Neither the doors nor the frames bear the code required 20 minute fire-resistive labels at most corridor openings. Window lites in the doors, however, are glazed with wire glass. Interior windows occur between the corridor and certain classrooms. They are wire glass in hollow metal frames.
- 9. Hardware on interior doors includes lever handled mortise locksets and closers on most classroom/corridor openings. Other doors in random locations do not have lever handles or closers. Sound seals and door bottoms have been installed on most classroom doors to control noise from the corridors. These seals also double as the required smoke seals on rated doors where they occur, however, not all corridor openings have them. A complete review of all interior hardware should be done and efforts made to bring the building up to code and ADA standards.
- 10. The building is served by the central campus steam and chilled water systems for heating and cooling. It has an outdated fire alarm system and is not equipped with an automatic fire sprinkler system.

#### C. Building Exterior:

- 1. The exterior of the building is comprised of dark red brick spandrel panels and continuous metal windows. Operable hopper vents are provided for manual ventilation.
- 2. The window system appears to be black anodized aluminum window components assembled in a continuous ribbon of windows. The window system reportedly leaks water and air. Operable windows in a public building also make it difficult for the HVAC system to function properly. Glazing appears to be single pane glass with tinting film applied to the inside of the glass, thus they are not very energy efficient.
- 3. Building entrances are painted hollow metal doors and frames with wire glass. The west and northwest entrances have handicapped accessible pushbutton devices for automatic opening. The south and northeast entrances have motion-activated sliding doors.

4. Soffits under the second floor connections to the adjacent buildings are of drywall or plaster construction and are in need of repair.

# D. Building Code Analysis:

1. The building would originally have been designed and constructed under the 1973 Uniform Building Code. Codes during that era were not as strict as the current International Building Code with respect to life safety issues. The following are the assumed Code classifications, applying the features of the existing building with the currently applicable 2006 IBC:

Occupancy: Group B (Educational occupancies above the 12<sup>th</sup> grade)

Const. Type: Type I-A Bldg. Area: Unlimited Bldg. Height: Unlimited

Struct. Frame: 3 Hours (Concrete columns and beams)
Floor/Ceiling: 2 Hours (Composite concrete floors)
Roof/Ceiling: 2 Hours (Composite concrete roof)
Ext. Walls 0 Hours (Setback – Table 602)

Shaft Encl. 2 Hours (Bldg. does not comply – See Issues below)

Partitions: 0 Hour (Interior non-load bearing)

Corridors: 1 Hour (Bldg. might not comply – See Issues below)
Sprinklers: Bldg. is not equipped with an automatic sprinkler system.

#### 2. Code Related Issues:

- a. Interior walls only extend to the non-rated suspended acoustical ceiling system throughout the building. This poses a sound transmission problem between rooms, as well as the condition does not provide one-hour required fire-rated corridor walls and ceiling envelope as a protected means of egress.
- b. IBC paragraph 3403.1 stipulates that additions or alterations to any existing building or structure shall comply with the requirements of the code for new construction. Conversely, portions of existing buildings not altered and not affected by the alteration are not required to comply with the requirements of the code for new construction. The Owner should consult with their code reviewing agency as to the extent of code compliance required in the areas of the building being renovated, based on minor upgrades (interior finishes only), moderate renovation and/or extensive interior construction.
- c. Should the code reviewing agency determine that basic egress and life safety components must be upgraded, the issue of fire rated corridors must be addressed. To establish the required egress envelope, existing corridor walls must be extended to the floor or roof above. Further, existing door and frames in the corridor walls do not bear the required U.L. labels to confirm their fire-rated

- capabilities. Doors, frames and hardware will have to be replaced with new rated assemblies unless one of the following alternatives are not taken. Any penetrations through the corridor walls, such as pipes, ducts, etc. would have to be fire dampered and/or fire caulked.
- d. The first alternative to replacing the corridor doors, frames and hardware with new assemblies would be to have a representative from Underwriters Laboratories visit the site to determine if the basic materials used in the existing doors and frames would comply with the requirements of the code. If they are determined to be salvageable, the missing hardware such as closers, smoke seals and door bottoms would need to be installed. The Underwriters Laboratories technician would then apply the required 20 minute fire labels to the doors and frames.
- e. A second alternative would be to conduct a cost/benefit analysis of installing an automatic fire sprinkler system throughout the building. As noted in IBC Table 1017.1, the required one-hour fire rating for corridors changes to zero-hours in a building with a sprinkler system. It should be noted, per IBC Section 903, that Group B buildings of this size are not required to have automatic fire sprinkler systems unless they exceed 55 feet in height from ground level to the highest floor level. In order to install a sprinkler system, the existing ceiling would undoubtedly have to be replaced throughout the building. The sprinkler system solution should only be entertained if it is determined to have a greater cost benefit than satisfying other code issues in a different manner.
- f. The stair at the southeast corner of the building is currently open between the first to the second floors. (The stair is enclosed from the second floor to the penthouse.) IBC paragraph 1020.1 requires vertical exit enclosures to be provided, however, Exception No. 8 allows 50% of the stairs serving one adjacent floor in a Group B occupancy to be open. Since this building only has one stair, it could be construed that it should be enclosed. However, with the Second Floor having corridors connecting to Central and Arts, three other means of egress are provided for the Second Floor. An inquiry should be made with the state's Code Agency having jurisdiction as to their interpretation into this matter. Further, if the corridor solution noted above is to install sprinklers, Exception No. 9 indicates the stair enclosure is not a requirement with sprinklers being present.
- g. Fire department standpipes and hose cabinets should be installed at stairs and located intermittently throughout the building so all portions of the building can be reached by a 30' nozzle stream on the end of a 100' house per IBC Section 905.
- h. The current IBC Code requires vertical shaft enclosures to be two-hour fire rated. The 1973 UBC also required shaft enclosures to be

- two-hour fire rated. However, since vertical shafts tend to be concealed, a more extensive survey should be conducted to determine that the extent and integrity of any shaft enclosures were constructed and have been maintained of the life of the building. Any penetrations in the enclosures must be repaired and fire caulked.
- i. Fire ratings of mechanical and electrical closets must be a minimum of one-hour. Numerous penetrations of existing walls by ducts, pipes and conduit were observed. Said penetrations must be repaired and fire caulked.
- j. One electrical closet was observed to have an apparent roof drain leader running over electrical equipment. Further investigations should be conducted to determine the extent of this problem. All conditions of this nature must be corrected.
- k. Some of the doors occurring in corridor walls have had floor stops installed on them to manually prop them open. In other locations, rubber wedge floor stops were in use by staff. Other locations were observed using a chair to prop the door open. It is assumed this practice was being used to control the temperature with the classroom or office. This practice violates the building code in that corridor doors should have closers and the doors should generally remain in the closed position to maintain the code required fire separation.
- The West Classroom Building is connected at the second floor to the Central Classroom Building to the east and the Arts Classroom Building to the north. Fire separation walls and rated fire doors are not provided between the three buildings to isolate fire migration and/or smoke infiltration between the buildings. Thus, for code classification, the three buildings would be considered one large building. As noted in the Code Analysis above, the total allowable area for a Group B, Type I-A building is unlimited. Therefore, fire separation walls are not required between buildings. However, if improvements are implemented for corridor walls/openings and/or sprinklers in West and Central and not in the Arts Building, a separation wall should be installed across the entire north end of West at the second floor level. The existing wall and doors presently located at the north end of the West corridors are not fire rated. They should be replaced with rated fire doors, with closers and magnetic hold-open devices, to provide a horizontal exit at the north end of the West corridors that lead into the Arts Building.
- m. The existing handrails and guardrails do not comply with current code. Handrails do not extend 12" beyond the top and bottom risers of a stair run. Guardrails are only 38" high rather than the required 42" and the space between the balusters is 8" rather than the required 4". The handrails and guardrails on the exterior steps at the north end of the building also do not comply. Portions of the

- walks have open-sided retaining walls that exceed the 30" vertical offset, thus requiring 42" high guardrails. The existing railings are only 38" high and only have one top rail with no intermediate balusters to restrict openings to 4" or less.
- n. The corridor widths appear to be adequate for the anticipated occupant loads. Corridors are 9' wide. Based on the estimated 30,500 net usable square feet per floor and, at a rate of 20 s.f. per person for classroom functions and 100 s.f. per person for office functions (assuming 25% of the usable area remains office), the estimated occupant load per floor would be 1,220. With four exits provided per floor, the corridors leading to each exit would need to accommodate 305 persons. A corridor that is 9' wide will accommodate 540 persons. The current total width of exterior door openings is 348", which will accommodate a total of 1,740 persons at the rate of 0.2" per occupant per IBC Table 1005.1
- o. The existing stair in the southeast corner of the building has treads that are 106" wide, which will accommodate 353 persons at a rate of 0.3" per occupant. Note: The number of occupants accommodated per inch of exit width increases to 0.15" and 0.2" when a building is sprinkled.
- p. The building has 4 exits on each floor, which is the quantity required when the occupant load exceeds 1,000. They are dispersed throughout the building in floor plan so as to provide a travel distance, measured from the most remote point within each story, to be within the maximum distance of 200 feet for an unsprinklered building.
- q. The building appears to have adequate coverage of portable fire extinguishers. Extinguisher cabinets are located in the corridors. Extinguishers should be checked to make sure they have recently be tested and certified.
- r. The number of toilet fixtures appears to comply with IBC Table 2902.1 requirements base on existing occupant loads. Should interior renovations significantly increase the occupant load, toilet fixtures may have to be added.
- s. Some of the current signage does not comply with ADA standards. Signage that does not comply should be updated to campus standards that are consistent with ADA requirements.

### E. Vertical Transportation:

1. The West Classroom Building does not have an elevator, which makes it difficult for a disabled person to readily move between classrooms on the first and second floors. One would have to exit the West Building, go to the adjacent Central Classroom or Arts Building, take the elevator to the second floor and cross over the bridge back into the West Building.

#### F. Americans with Disabilities Act:

- 1. The building is generally in compliance with the ADA, with certain exceptions. Accessible routes from the campus into the building are present at each entrance. Exterior doors have either motion-activated sliding doors or push button actuated swing doors. [Photo No. 9]
- 2. The public restrooms have fixtures, accessories, toilet partitions and most of the dimensional spacing required by ADA. However, the accessible stalls are only 48" wide and 66" deep. [Photo No. 19]
- 3. Interior doors have lever handled hardware on most openings. Those doors not having appropriated hardware should be updated.
- 4. Some of the existing signage does not comply with ADA requirements.
- 5. The building does not have an elevator. Disabled persons wanting to go from the First Floor to the Second Floor must exit the building, travel to either one of the adjacent classroom buildings, go the Second Floor on the elevator in one those buildings and then cross over the bridge back into the West Building.

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# Memorandum

To: Amy Tabor, RNL Design

From: Scott Muller

Jim Hulburt

Date: October 22, 2009

Subject: Communications Infrastructure Backfill Comments and Recommendations

#### Overview

The communications infrastructure that serves the various classroom buildings, including the administration building, is a mix of cable categories ranging from Cat 3 to Cat 6 depending on when it was installed. Current AHEC standards are Category 6, however, the majority of the installed data cable currently serving the buildings where backfill activities will take place is Category 5 which means it is 10-15 years old. Although the cable is still serviceable and capable of supporting Ethernet workstations at speeds up to 100 Mbit, workstations connecting at higher speeds may experience degraded throughput. With this in mind we recommend, as a general rule, if a voice/data outlet is to be relocated then the existing cable and jacks be replaced with Category 6 cable and jacks to bring the outlet up to AHEC standards. Obviously, new outlets would meet the current standard. A copy of the cabling standard is attached for your reference.

Referencing the Building Infrastructure Distribution Systems Guidelines, Methods and Standards document from the Auraria Cooperative Telecommunications Committee (ACTC), revision 2.1 dated June, 2009, we suggest using the following telecommunications outlet (TO) configurations for cost estimation purposes:

- CIP Classroom (5) Category 6 cables, (5) Category 6 jacks, 6-port faceplate
- Computer lab (6) Category 6 cables, (6) Category 6 jacks, 6-port faceplate
- Office outlet (2 per office) (2) Category 6 cables, (2) Category 6 jacks, 6-port faceplate
- Lectern jack (3) Category 6 cables, (3) Category 6 jacks, 6-port faceplate

Based on site surveys done on 10/9 and 10/15, the following conditions may affect the projected costs.

The following narrative addresses the recommended changes for each of the areas scheduled for remodel and backfill. Based on the levels of remodel planned, the following general guidelines should be followed:



- 1. Level 1 Cosmetic Changes No change to the cabling infrastructure required unless a wall is moved or relocated.
- 2. Level 2 50% Remodel All cabling in the impacted areas will need to be replaced due to reconfiguration of the spaces.
- 3. Level 3 Extensive Remodel All cabling to be replaced as well as reconfiguration and expansion of the telecommunications rooms (TR) to meet current standards.

### **Arts Building**

Backfill work is planned on the second floor only. There is a new telecom room (TR) P200X that serves the northwest portion of the building where moderate remodel is planned (284 – 287). This TR has adequate space to add new data and voice cable. It may be possible to reuse existing cable in this area if it meets current AHEC Cat 6 standards, but only if the cable will reach the intended outlet location. As a matter of practicality, however, it often is more labor intensive reusing existing cable than to pull new cable. This is because a contractor must identify and stage the existing cables to determine if they will reach the new intended locations. They must also protect cables planned for reuse from demolition work. Often, the contractor will expend considerable labor only to determine the cables are too short to reach their intended destination or the cables get damaged and new cables have to be installed. We would caution that you not depend on reusing cable as a cost mitigation strategy.

There is a second area with minimal work scheduled (rooms 269 and 270). This area is currently served from TR P200P. This TR is approximately 3-1/2' deep by 4' wide and is full. There is no room to expand. The project should carry cost to expand this TR. See photo # 1. The data cable in the remodel area is mostly Cat 5 and should be upgraded to Cat 6.

### **Central Classroom Building**

#### First Floor

The entire floor is slated for some level of remodel. All areas are served from a single TR P100E located off the main corridor. Existing data cable is a mix of Cat 5e and Cat 6. In the area slated for Minimal work, we suggest reusing existing cable where outlets will not be relocated and the cable is at least Cat 5e. The area on the west side slated for Extensive remodel should be recabled entirely and brought up to Cat 6 standard.

#### **Second Floor**

The second floor is served by TR P200B. Approximately one-third of the floor is slated for minimal remodel. Based on observations, much of the installed data cable on this floor is Category 5. We would recommend that any Category 5 cable installed in the remodel area be upgraded to Category 6.

#### Third Floor

The third floor is served by TR P300C (voice and Cat 5 data wall fields) and a room immediately behind (311) that contains the newer Cat 5e and Cat 6 data patch panels and network equipment. The door to



311 is left open to help with heat build-up that occurs when closed. It has been suggested this room be relocated in the space just outside the MSCD computer room (308A). AHEC has expressed concern that this potentially would limit access to the data TR to UCD and CCD IT staffs since the room would be inside MSCD space. If the decision is made to relocate this room then we would recommend that all data cable on this floor be replaced rather than attempt to move existing cable since much of the existing cable is Category 5. A better approach might be to eliminate the wall and door into the back part of 311 and remove the old mail boxes and make this a larger room. There is considerable cost with this approach as the existing voice wall field would need to be moved. However, since most of the floor is being remodeled, it would be more practical to install all new cable and remove older voice, Cat 5 and 5e cable.

# **West Classroom Building**

#### **First Floor**

TR P100L is the TR for all voice and data cabling on this floor. As is the case in the Central classroom building, the cable plant is a mix of Cat 5, 5e and 6. P100L is extremely space constrained and the current layout of the room does not lend itself to easily upgrade cable as areas on this floor are remodeled. See photos # 2 and # 3. Additionally, this room also serves as the entrance facility for the building and contains a fiber hub that not only serves the building but also several adjacent buildings. It also is the point of entrance for campus copper cable connecting to the campus phone switch. With all of this in mind, our recommendation is to locate a new, centrally located space of 120 SF to meet standards or at least a minimum 70-80 SF on the first floor to establish a new first floor TR for voice and data. As areas are remodeled and new Cat 6 cable installed, older cable can be removed from P100L and over time this room will revert to its primary function as an entrance facility since it is neither cost effective nor practical to relocate the fiber hub or copper campus cable in this room. The downside to creating a new first floor TR is AHEC and the school IT groups will have to provide additional electronics because services would be split between P100L and the new TR. Long-term however, as areas are remodeled, cable will naturally migrate to the new TR and electronics can be consolidated. One possible space to explore is P100N which was a voice IDF but is no longer in service. The space would require enlargement to achieve the standard 120 SF or the minimum 70-80 SF needed. In addition, the copper and fiber backbone would need to be extended to this room from P100L. This new space would then become the primary TR for the first floor and overtime voice and data would migrate from P100L as remodels are completed.

#### **Second Floor**

TR P200M is the TR for all voice and data cabling on the second floor. Approximately half of the second floor is slated for remodel. The majority of the planned remodel areas are marked as minimal but as much of the installed cable is Cat 5, consideration should be given to upgrading all remodel areas to Cat 6. Based on the electronics in this TR (see photo # 4) this TR supports a large number of data connections. As can be seen in the photo, there is no access behind the equipment rack that contains the electronics. This TR needs to be enlarged so access behind this rack is possible and access to a second rack with data patch panels is possible.



There is a computer lab in classroom 262A that has its own telecom room and requires no upgrades. See photos # 5 and # 6. The classroom has an overhead projector, screen and sound system.

### **Administration Building**

The Administration building TRs on each floor are good size and well laid out requiring little, if any, work. All TRs are stacked and have conduit sleeves entering on two sides of the room. See photo # 7. With the exception of the 4th floor TR, there is room to add new patch panels in the equipment racks.

#### **First Floor**

There is no remodel planned on this floor other except assignment change for two classrooms.

#### **Second Floor**

There are two areas marked for extensive remodel with spaces changing from office to seminar rooms or classrooms. Much of the existing cable is Cat 5 with some Cat 5e and Cat 6. Due to the remodel plans, it is recommended all cable, regardless of category, be removed and new cable installed. There may be some Cat 6 cable in the former Denver Traffic space that could be reused but for cost estimation purposes it would be best to assume all new cable for the remodel areas.

#### **Fourth Floor**

The suite 400/420 area is slated for minimal remodel. Most of the cable is Cat 5 vintage so consideration should be given to upgrading to Cat 6.

#### Fifth Floor

The entire floor is slated for minimal remodel. Most of the cable is Cat 5 vintage so consideration should be given to upgrading to Cat 6.

### **MSCD Data Center**

The data center, located on the fourth floor, will be expanded. This will entail demoing the wall between the data center and suite 400 and extending the 12" raised floor into the expansion space. There is also an interior wall that has been constructed in the data center that serves to block the west facing windows (See photo # 8) that will need to be extended all the way to the corner of the building and then along the southern windows. Not all the space needs to be on raised floor but any area added to the south of the existing data center should be at least 20-22 feet wide to accommodate two rows of equipment cabinets and their corresponding front and rear access after factoring in the space taken by the window wall. Fire suppression/detection will need to be expanded as needed as well as basic electrical and lighting.

IT would like to have the existing ramp moved but this does not appear to be practical based on the preliminary room plan and potential electrical changes and should be left as is.



MSCD has plans to add two more CRAC units and a second UPS. It is our understanding this equipment has already been budgeted for and not in the expansion budget. We recommend confirming this with MSCD prior to finalizing cost estimates.

#### **Security Systems**

Security Systems consist of access control and video surveillance. The campus is moving from a swipe card system to proximity card. Any areas being remodeled that have existing swipe cards would be upgraded to the current standard. Access control will be required on the entrance to any department areas that are only occupied during working hours. This would include professor offices, enhanced conference areas and select offices containing sensitive data. Telecommunication Rooms should also have access control added to facilitate a record of access due to the use by multiple entities.

Video surveillance is used very sparingly throughout the campus. Assuming the standard has not changed video surveillance would be limited to sensitive areas where cash is transacted or critical records are kept. This would include admissions, transcripts or financial data. Other common areas should be considered for video surveillance, these include break rooms, outside congregation areas and entrances or alcoves sheltered from public visibility.

#### Audiovisual

AHEC has established a standard for their "Smart" classroom. The system consists of a projection system, document camera, sound reinforcement and media systems. A complete list of the equipment that comprises these rooms is attached for your reference.

A seminar room would have limited technology in the form of a projection system and if designed to accommodate more than 30 people should also have sound reinforcement for microphone or any media content played from a laptop o the network.



# **Photos**

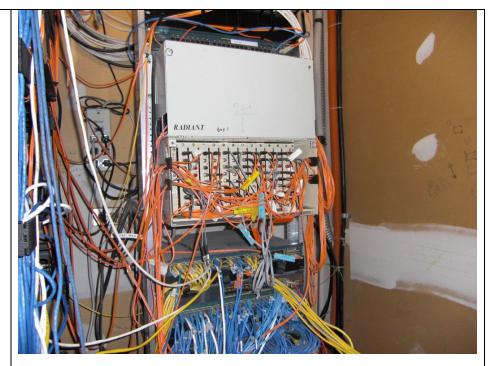
1.

TR P200P located in Arts building, second floor. There is no room left on the wall to add new cable. The equipment rack pictured here is not secured to the floor and only contains electronics. Although room is available in the rack for patch panels, this is not acceptable as no access is available behind the rack.



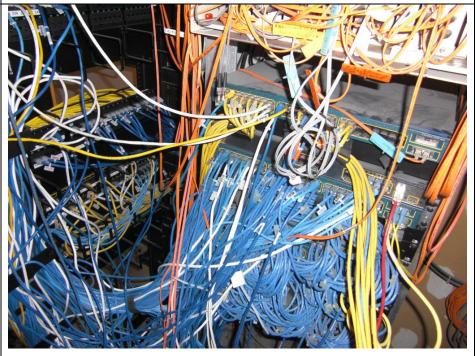


Fiber hub rack located in West P100L. It is not practical to relocate this rack.



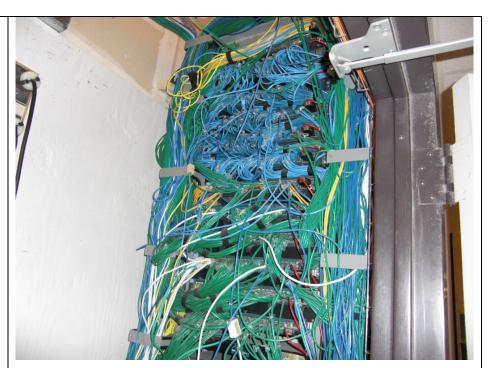
3.

Existing equipment racks in West P100L.





Pictured is a 9-foot equipment rack that is almost entirely full of Ethernet switches. Each patch cord is a connection to a jack somewhere on the floor. There is no access behind this rack to service equipment. Expanding this space 3-4 feet behind the rack and adding a door should be considered.



5.

Classroom computers are cabled to the wall mounted patch panel above the cabinet.





The faceplate below the wall mounted patch panel is the connection to TR P200M.



7.

Conduits entering Admin TR showing available space for new cable.





Looking inside space created by new wall. This wall will need to be extended in the data center expansion space.



# **End of Report**

Every attempt has been made to ensure that items referred to in these notes are accurate. If there are any questions or corrections, please contact Scott Muller or Jim Hulburt at 303-340-8228.

### **Appendix**

**COST ESTIMATE DETAIL** AND SUPPORTING DRAWINGS



# Metropolitan College of Denver Backfill Project Denver, Colorado

November 19, 2009

Prepared for RNL Design

6901 S. PIERCE STREET, SUITE 301 • LITTLETON • COLORADO • 80128 PHONE: 303-948-7224 • FAX: 303-948-7230

# **Project Information Sheet**

# A) General Info

Client: Metropolitan College of Denver

Project Name: Backfill Project

**Location:** Denver, Colorado

**Estimate Date: 11/19/09** 

Job #: 09-00000.00

Milestone / Stage: Backfill Program Plan

# **B) Indirect Costs**

General Conditions (%): 8.0%

Bonds & Insurance (%): 2.25%

General Contractor Fee (%): 5.00%

Design Contingency 10%

Contractor's Contingency (%): 0%

Escalation 4.59%

# **C) Construction Dates**

Start Date: 01/01/2011 for Phase 1, 04/01/2012 for Phase 2

Completion Date: 06/01/13

# Metropolitan College of Denver Backfill Project Backfill Program Plan

11/19/09

Criteria:	
Estimate Date	11/19/09
Estimate Date Construction Start	01/01/11
Construction Completion	10/01/11

Region:	Denver, Colorado

Construction Construction Construction	Duration:	273 Days 9 months <b>05/17/11</b>		days	
Year	Time	Rate	Total	Compounded Rate	
2009	0.12	2.0%	0.2%		
2010	1.00	3.0%	3.0%	3.24%	
2011	0.37	3.5%	1.3%	4.59%	<b>Midpoint Year Rate</b>
2012	0.00	4.0%	0.0%	4.59%	
2013	0.00	4.0%	0.0%	4.59%	
2014	0.00	5.0%	0.0%	4.59%	
2015	0.00	5.0%	0.0%	4.59%	
2016	0.00	5.0%	0.0%	4.59%	
2017	0.00	5.0%	0.0%	4.59%	
2018	0.00	5.0%	0.0%	4.59%	
2019	0.00	5.0%	0.0%	4.59%	

Total Esca	alation: 4.	.59%

# Metropolitan College of Denver Backfill Project Backfill Program Plan

11/19/09

Criteria:	
Estimate Date	11/19/09
Construction Start	04/01/12
Construction Completion	06/15/13

Region:	Denver, Colorado

Derived: Construction Construction Construction	Duration:	440 Days 15 months 11/07/12	Calendar	days	
Year	Time	Rate	Total	Compounded Rate	
2009	0.12	2.0%	0.2%		
2010	1.00	2.5%	2.5%	2.74%	
2011	1.00	3.5%	3.5%	6.34%	
2012	0.85	4.0%	3.4%	9.96%	<b>Midpoint Year Rate</b>
2013	0.00	4.0%	0.0%	9.96%	
2014	0.00	5.0%	0.0%	9.96%	
2015	0.00	5.0%	0.0%	9.96%	
2016	0.00	5.0%	0.0%	9.96%	
2017	0.00	5.0%	0.0%	9.96%	
2018	0.00	5.0%	0.0%	9.96%	
2019	0.00	5.0%	0.0%	9.96%	

Total Escalation:	9.96%

Metropolitan College of Denver Backfill Project Schedule of Areas & Control Quantities Backfill Program Plan Cumming

Backfill P	roiect
Dackiiii F	IUICL

		TOTAL
Schedule of Areas	SF	SF
Areas Phase 1	Building	Total
Administration Building	30,358	30,358
West Classroom Building	11,431	11,43
Central Classroom Building Art Building King Building Tech Building	2,705	2,70
Subtotal, Areas Phase 1	44,494	44,49
Areas Phase 2	Building	Total
Administration Building	2,515	2,51
West Classroom Building	16,884	16,88
Central Classroom Building	50,939	50,93
Art Building	3,342	3,34
King Building	9,197	9,19
Tech Building	1,829	1,829
Subtotal, Areas Phase 2	84,706	84,70
Total Program Area	129,200	129,200

#### **Backfill Program Plan**

Proj Metropolitan College of Denver Loc: Denver, Colorado Owr Metro College

ProįRNL Design

# GENERAL SUMMARY Backfill Project

	TOTAL AREA SF	TOTAL COST \$	UNIT COST \$/SF
ADMINISTRATION BUILDING	32,873	\$1,718,212	\$52.27
WEST CLASSROOM BUILDING	28,315	\$1,693,299	\$59.80
CENTRAL CLASSROOM BUILDING	53,644	\$2,790,028	\$52.01
ART BUILDING	3,342	\$174,056	\$52.08
KING BUILDING	9,197	\$341,466	\$37.13
TECH BUILDING	1,829	\$121,290	\$66.32
TOTAL CONSTRUCTION COST	129,200	\$6,838,352	\$52.93

PROGRAM COST			
Construction Cost			\$6,838,352
Site Surveys, Investigation Reports			\$175,000
AE Fees			\$451,500
Consultants Fees			\$100,000
Construction Management			\$459,000
		Total	\$8,023,852
Equipment			\$400,000
Furnishings			\$485,000
Communications Digital/Optic			\$225,000
		Total	\$9,133,852
Art in Public Spaces	1% of Construction Cost		\$68,384
Relocation Cost			\$200,000
		Total	\$9,402,236
Program Contingency	10%		\$940,224
TOTAL PROGRAM BUDGET			\$10,342,460

Project: B Location: D Owner: N Program: R	Backfill Project Denver, Colorado Metropolitan College of RNL Design	Denver			Administration Building	Building	Phase 1			
	Extensive A		Extensive B		Moderate		Minimal		TOTAL COST	JST
	TOTAL COST	COST/SF	T	COST/SF			COST	COST/SF	TOTAL COST (	COST/SF
AREA	982		1,735		3,050		24,588		30,358	
A10 FOUNDATIONS	0\$		\$0						0\$	\$0.00
A20 BASEMENT CONSTRUCTION	0\$		\$0						0\$	
B10  SUPERSTRUCTURE	0\$		\$0						0\$	\$0.00
B20 EXTERIOR CLOSURE	0\$		\$0						0\$	\$0.00
B30 ROOFING	0\$		\$0						0\$	\$0.00
C10 INTERIOR CONSTRUCTION	\$10,343	\$10.50	\$18,218	\$10.50		6.50	\$61,470	\$2.50	\$90,030	\$3.42
C20 STAIRS	0\$		\$0						0\$	\$0.00
C30 INTERIOR FINISHES	\$7,388	\$7.50	\$13,013	\$7.50		6.45	\$193,016	\$7.85	\$213,416	\$8.11
D10   CONVEYING SYSTEMS	00:09		\$0	\$0.00					0\$	
D20 PLUMBING	\$3,447.50	\$3.50	\$6,073	\$3.50					\$9,520	\$0.36
D30 HVAC	\$20,685.00	\$21.00	\$36,435	\$21.00		3.00	\$73,764		\$130,884	\$4.97
D40 FIRE PROTECTION	\$0.00 \$1,477.50	\$1.50	\$2,603	\$1.50		1.50	\$36,882		\$40,962	\$1.56
D50 ELECTRICAL	\$0.00 \$17,089.75	\$17.35	\$30,102	\$17.35		12.75	\$313,497		\$360,689	\$13.70
E10 EQUIPMENT	\$1,970.00	\$2.00	\$3,470	\$2.00		2.00	\$49,176		\$54,616	\$2.07
E20 FURNISHINGS	\$0.00 \$1,970.00	\$2.00	\$3,470	\$2.00		2.00	\$49,176		\$54,616	\$2.07
F20 SELECTIVE BUILDING DEMOLITION	\$4,432.50 \$4,432.50	\$4.50	\$7,808	\$4.50		3.50	\$86,058	\$0.75	\$98,298	\$3.73
F320   HAZARDOUS MATERIAL REMOVAL	\$4,925.00	\$5.00	\$8,675	\$5.00		4.00	\$98,352	\$1.00	\$111,952	\$4.25
NET CONSTRUCTION COST	\$68,802		\$121,190	\$74.85			\$961,391	\$12.10	\$1,164,983	\$40.00

Location:  Owner: Project:  Location: Owner:	Backfill Project Denver, Colorac Metropolitan Cc RNL Design	Backfill Project Denver, Colorado Metropolitan College of Denver RNL Design	Denver			Administration Building	Building	Phase 1		November 19, 2009	9, 2009
Page		Extensive A				Moderate		Minimal		_	OST
		TOTAL COST	COST/SF	_	COST/SF			TOTAL COST	S S S		COST/SF
SUBTOTAL CONSTRUCTION COST		\$68,802		\$121,190	\$74.85			\$961,391	\$12.10	\$1,164,983	\$40.00
Z10 OVERHEAD AND PROFIT									:		
GENERAL CONDITIONS TEMPORARY UTILITIES COST ALLOW	8.00%	\$5,504		\$9,695	\$5.59			\$76,911 \$0		\$93,199 \$0	\$3.54
DESIGN AND CONSULTING FEE		\$0		\$0				\$0		\$0	\$0.00
FIELD REQUIREMENTS	2.00%	\$1,032		\$1,010	\$1.03			\$14,421		\$23,300	\$0.89
INSURANCE GENERAL CONTRACTOR FEE	0.75%	\$516		\$909	\$0.52			\$7,210	\$0.29	\$8,737	\$0.33
	9	) }		) ) )	) )			0,0		0,000	7:7
SUBTOTAL CONSTRUCTION COST		\$80,671	<mark>\$0</mark>	\$142,095	\$86.90			\$1,127,231	\$18.84	\$1,365,942	\$47.64
Z20   CONTINGENCIES DESIGN CONTINGENCY BID CONTINGENCY	10.00%	0\$		\$14,209	\$0.00			\$112,723	\$4.58	\$136,594	\$5.19
SUBTOTAL CONSTRUCTION COST		\$80,671	\$0	\$156,304	\$95.09			\$1,239,954	\$23.43	\$1,502,537	\$52.83
Z30 ESCALATION See Table	4.59%	0\$		\$7,181	\$0.00			\$56,964	\$2.32	\$69,027	\$2.62
TOTAL PROJECT CONSTRUCTION COST	ST	\$80,671	\$0	\$163,485	\$99.23			\$1,296,918	\$25.75	\$1,571,564	\$59.70
TOTAL GROSS AREA		985		1,735		3,050		24,588		26,323	

\$110,009 \$ 1,681,573

CONSTRUCTION PHASING

Project: Backfill Proj Location: Denver, Cole Owner: Metropolitan Program: RNL Design	Backfill Project Denver, Colorado Metropolitan College of RNL Design	Denver			Administration Building	Suilding	Phase 2		November 19, 2009	9, 2009
	Extensive A	19/F3OO	Extensive B	TO TO	Moderate	,	Minimal	TO TO	TOTAL COST	OST
AREA	2021	islisoo	0	500			2,515		2,515	
A10  FOUNDATIONS	\$0.00		\$0.00						\$0.00	\$0.00
A20 BASEMENT CONSTRUCTION	\$0.00		\$0.00						\$0.00	
B10 SUPERSTRUCTURE	\$0.00		\$0.00						\$0.00	\$0.00
B20 EXTERIOR CLOSURE	\$0.00		\$0.00						\$0.00	\$0.00
B30 ROOFING	\$0.00		\$0.00						\$0.00	\$0.00
C10 INTERIOR CONSTRUCTION			\$0.00	\$10.50				\$2.50	\$0.00	\$0.00
C20 STAIRS									\$0.00	\$0.00
C30 INTERIOR FINISHES			\$0.00	\$7.50			\$19,742.75	\$7.85	\$19,742.75	\$7.85
D10   CONVEYING SYSTEMS				#DIV/0i					\$0.00	
D20 PLUMBING			\$0.00	\$3.50					\$0.00	\$0.00
D30 HVAC			\$0.00	\$21.00					\$0.00	\$0.00
D40 FIRE PROTECTION			\$0.00	\$1.50					\$0.00	\$0.00
D50 ELECTRICAL			\$0.00	\$17.35					\$0.00	\$0.00
E10 EQUIPMENT			\$0.00	\$2.00					\$0.00	\$0.00
E20  FURNISHINGS			\$0.00	\$2.00					\$0.00	\$0.00
F20   SELECTIVE BUILDING DEMOLITION			\$0.00	\$4.50			\$1,886.25	\$0.75	\$1,886.25	\$0.75
F320   HAZARDOUS MATERIAL REMOVAL			\$0.00	\$5.00			\$2,515.00	\$1.00	\$2,515.00	\$1.00
NET CONSTRUCTION COST			\$0.00	\$0.00			\$24,144.00	\$12.10	\$24,144.00	\$8.60

Project:	Backfill Project Denver, Colora	Backfill Project Denver, Colorado								November 19, 2009	, 2009
Owner: Program:	Metropolitar RNL Design	metropolitan College of Denver RNL Design	Denver			Administration Building	Building	Phase 2			
Page		Extensive A		Extensive B		Moderate		Minimal		TOTAL COST	ST
e 18		TOTAL COST	COST/SF	TOTAL COST	COST/SF			TOTAL COST	COST/SF	TOTAL COST	COST/SF
SUBTOTAL CONSTRUCTION COST	OST	\$0.00		\$0.00	\$0.00			\$24,144.00	\$12.10	\$24,144.00	\$8.60
Z10 OVERHEAD AND PROFIT											
	8.00%			\$0.00				\$1,931.52	\$0.77	\$1,931.52	\$0.77
TEMPORARY UTILITIES COST ALLOW	\LLOW	\$0.00		\$0.00	\$0.00			\$0.00	\$0.00	\$0.00	\$0.00
DESIGN AND CONSULTING FEE				\$0.00				\$0.00		\$0.00	\$0.00
BOND	1.50%			\$0.00				\$362.16		\$362.16	\$0.14
FIELD REQUIREMENTS	2.00%			\$0.00				\$482.88		\$482.88	\$0.19
INSURANCE	0.75%			\$0.00				\$181.08		\$181.08	\$0.07
GENERAL CONTRACTOR FEE	5.00%			\$0.00				\$1,207.20		\$1,207.20	\$0.48
SUBTOTAL CONSTRUCTION COST	)ST	\$0.00	\$0.00	\$0.00	\$0.00			\$28,308.84	\$13.76	\$28,308.84	\$10.26
					•						
DESIGN CONTINGENCES  DESIGN CONTINGENCY	10.00%	\$0.00		\$0.00	\$0.00			\$2,830.88	\$1.13	\$2.830.88	\$1.13
BID CONTINGENCY									•		
SUBTOTAL CONSTRUCTION COS	OST ST	\$0.00	\$0.00	\$0.00	\$0.00			\$31,139.72	\$14.88	\$31,139.72	\$11.38
					\$0.00						
ESCALATION See Table	%96.6	\$0.00		\$0.00				\$3,102.04	\$1.23	\$3,102.04	\$1.23
TOTAL BRO IECT CONSTRIICTION COST	ONCOST	<del>v</del>	U	·	- *			¢34 242	4612	34 242	12.62
TOTAL PROJECT CONSTRUCT	ON COST	•	⊕	•	<del>•</del>			404, <b>24</b> 2			13.02
TOTAL GROSS AREA				•				2,515		2,515	

\$2,397 \$ 36,639

CONSTRUCTION PHASING

Page 11

Backfill Project Denver, Colorado Metropolitan College of Denver RNL Design Project: Location: Owner: Program:

Program: RNL Design	RNL Design	5		•	West Classroom Building	n Building	Phase 1	•		
			Extensive B		Moderate		Minimal		_	OST
	TOTAL COST C	COST/SF	TOTAL COST	COST/SF			TOTAL COST	COST/SF	TOTAL COST	COST/SF
AREA			2,633		8,797		026'9		18,360	
A10  FOUNDATIONS	\$0.00		\$0.00						\$0.00	\$0.00
A20 BASEMENT CONSTRUCTION	\$0.00		\$0.00						\$0.00	
B10 SUPERSTRUCTURE	\$0.00		\$0.00						\$0.00	\$0.00
B20 EXTERIOR CLOSURE	\$0.00		\$0.00						\$0.00	\$0.00
B30 ROOFING	\$0.00		\$0.00						\$0.00	\$0.00
C10 INTERIOR CONSTRUCTION			\$36,862.00	\$14.00	\$57,180.50	\$6.50		\$2.50	\$94,042.50	\$5.98
C20 STAIRS									\$0.00	\$0.00
C30 INTERIOR FINISHES			\$23,302.05	\$8.85	\$56,740.65	\$6.45	\$54,400.50	\$7.85	\$134,443.20	\$8.55
D10   CONVEYING SYSTEMS				\$0.00					\$0.00	
D20 PLUMBING			\$9,215.50	\$3.50		\$0.00			\$9,215.50	\$0.59
D30 HVAC			\$55,293.00	\$21.00	\$26,391.00	\$3.00			\$81,684.00	\$5.19
D40 FIRE PROTECTION			\$3,949.50	\$1.50	\$13,195.50	\$1.50			\$17,145.00	\$1.09
D50 ELECTRICAL			\$45,682.55	\$17.35	\$112,161.75	\$12.75			\$157,844.30	\$10.04
E10 EQUIPMENT			\$5,266.00	\$2.00	\$17,594.00	\$2.00			\$22,860.00	\$1.45
E20 FURNISHINGS			\$5,266.00	\$2.00	\$17,594.00	\$2.00			\$22,860.00	\$1.45
F20 SELECTIVE BUILDING DEMOLITION			\$11,848.50	\$4.50	\$30,789.50	\$3.50	\$5,197.50	\$0.75	\$47,835.50	\$3.04
F320 HAZARDOUS MATERIAL REMOVAL			\$13,165.00	\$5.00	\$35,188.00	\$4.00	\$6,930.00	\$1.00	\$55,283.00	\$3.52
NET CONSTRUCTION COST			\$196,685.10	\$79.70	\$366,834.90	\$41.70	\$66,528.00	\$12.10	\$643,213.00	\$37.38

Backfill Project	Colorado
Backfil	Denver
Project:	l ocation:

Master Document Pa

Location: Denver, Colorado Owner: Metropolitan College of Denver Program: RNL Design

West Classroom Building Phase 1

ige 1			Extensive A		Extensive B		Moderate		Minimal		TOTAL COST	COST
88			TOTAL COST	COST/SF	TOTAL COST	COST/SF			TOTAL COST	COST/SF	TOTAL COST   COST/SF	COST/SF
าร	SUBTOTAL CONSTRUCTION COST		\$0.00		\$196,685.10	\$79.70	\$366,834.90	\$41.70	\$66,528.00	\$12.10	\$643,213.00	\$37.38
VO 01Z	OVERHEAD AND PROFIT											
55 P	GENERAL CONDITIONS TEMPORARY UTILITIES COST ALLOW	8.00%	\$0.00		\$15,734.81	\$5.98	\$29,346.79	\$3.34	\$5,322.24	\$0.77	\$51,457.04	\$3.27
<b>8</b>	DESIGN AND CONSULTING FEE		\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BC	BOND FIELD REQUIREMENTS	1.50%	\$0.00 \$0.00		\$2,950.28	\$1.12	\$5,502.52	\$0.63	\$997.92 \$1.330.56	\$0.14	\$9,648.20	\$0.61
Ž	INSURANCE	0.75%	\$0.00		\$1,475.14	\$0.56	\$2,751.26	\$0.31	\$498.96	\$0.07	\$4,824.10	\$0.31
<b>.</b>	GENERAL CONTRACTOR FEE	2.00%	\$0.00		\$9,834.26	\$3.74	\$18,341.75	\$2.09	\$3,326.40	\$0.48	\$32,160.65	\$2.04
าร	SUBTOTAL CONSTRUCTION COST		\$0.00	\$0.00	\$230,613.28	\$92.59	\$430,113.92	\$48.89	\$78,004.08	\$13.76	\$754,167.24	\$44.44
Z20 CC						\$0.00						
<u> </u>	DESIGN CONTINGENCY BID CONTINGENCY	10.00%	\$0.00		\$23,061.33	\$8.76	\$43,011.39		\$7,800.41	\$1.13	\$75,416.72	\$4.80
<mark>าร</mark>	SUBTOTAL CONSTRUCTION COST		\$0.00	\$0.00	\$253,674.61	\$101.34	\$473,125.31	\$48.89	\$85,804.49	\$14.88	\$829,583.97	\$49.23
Z30 ES	ESCALATION					\$0.00						
ES	ESCALATION See Table	4.59%	\$0.00		\$11,653.89	\$4.43	\$21,735.53		\$3,941.89	\$0.57	\$38,111.36	\$2.42
TC	TOTAL PROJECT CONSTRUCTION COST	ST.	\$0.00	\$0.00	\$265,328.50	\$105.77	\$494,860.84		\$89,746.37	\$15.45	\$867,695.33	\$55.17
77	TOTAL GROSS AREA				2,633		8,797		6,930		15,727	

CONSTRUCTION PHASING

8.00%

\$69,416 \$ 937,111 Page 12

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Project: Location: Owner: Program:

Backfill Project Denver, Colorado Metropolitan College of Denver RNL Design

Program: RNL Design	RNL Design	5		West Classroom Building	ו Building ח	Phase 2			
	Extensive A	Extensive B		Moderate		Minimal		TOTAL COST	COST
	TOTAL COST COS	COST/SF TOTAL COST	COST/SF			TOTAL COST	COST/SF	TOTAL COST	COST/SF
AREA		\$ 2,413.00		5,061		9,410		16,884	
A10   FOUNDATIONS	\$0.00	\$0.00						\$0.00	\$0.00
A20   BASEMENT CONSTRUCTION	\$0.00	\$0.00						\$0.00	
B10  SUPERSTRUCTURE	\$0.00	\$0.00						\$0.00	\$0.00
B20 EXTERIOR CLOSURE	\$0.00	\$0.00						\$0.00	\$0.00
B30 ROOFING	\$0.00	\$0.00						\$0.00	\$0.00
C10 INTERIOR CONSTRUCTION	\$0.00	\$33,782.00	\$14.00	\$32,896.50	\$6.50		\$2.50	\$66,678.50	\$4.61
C20 STAIRS								\$0.00	\$0.00
C30 INTERIOR FINISHES		\$21,355.05	\$8.85	\$32,643.45	\$6.45	\$73,868.50	\$7.85	\$127,867.00	\$8.84
D10   CONVEYING SYSTEMS			\$0.00					\$0.00	
D20  PLUMBING		\$8,445.50	\$3.50		\$0.00			\$8,445.50	\$0.58
D30 HVAC		\$50,673.00	\$21.00	\$15,183.00	\$3.00			\$65,856.00	\$4.55
D40 FIRE PROTECTION		\$3,619.50	\$1.50	\$7,591.50	\$1.50			\$11,211.00	\$0.77
D50   ELECTRICAL		\$41,865.55	\$17.35	\$64,527.75	\$12.75			\$106,393.30	\$7.35
EQUIPMENT		\$4,826.00	\$2.00	\$10,122.00	\$2.00			\$14,948.00	\$1.03
E20 FURNISHINGS		\$4,826.00	\$2.00	\$10,122.00	\$2.00			\$14,948.00	\$1.03
F20   SELECTIVE BUILDING DEMOLITION		\$10,858.50	\$4.50	\$17,713.50	\$3.50	\$7,057.50	\$0.75	\$35,629.50	\$2.46
F320   HAZARDOUS MATERIAL REMOVAL		\$12,065.00	\$5.00	\$20,244.00	\$4.00	\$9,410.00	\$1.00	\$41,719.00	\$2.88
NET CONSTRUCTION COST		\$180,251.10	\$79.70	\$211,043.70	\$41.70	\$90,336.00	\$12.10	\$493,695.80	\$31.23

Backfill Project	Denver Colorado
Project:	Location:

Denver, Colorado	Metropolitan College of Denver	RNL Design
Location:	Owner:	Program:

М												
aster Document Pa	Project: Location: Owner: Program:	Backfill Proj Denver, Cok Metropolitan RNL Design	Backfill Project Denver, Colorado Metropolitan College of Denver RNL Design	Denver			West Classroom Building	n Building	Phase 2		November 19, 2009	19, 2009
ige 1			Extensive A		Extensive B		Moderate		Minimal		TOTALCOST	COST
90			Н	COST/SF	TOTAL COST	COST/SF			TOTAL COST	COST/SF	TOTAL COST	COST/SF
	SUBTOTAL CONSTRUCTION COST	OST	\$0.00		\$180,251.10	\$79.70	\$211,043.70	\$41.70	\$90,336.00	\$12.10	\$493,695.80	\$31.23
Z10	OVERHEAD AND PROFIT GENERAL CONDITIONS TEMPORARY UTILITIES COST ALLOW DESIGN AND CONSULTING FEE BOND FIELD REQUIREMENTS INSURANCE GENERAL CONTRACTOR FEE	8.00% ALLOW 1.50% 2.00% 0.75% 5.00%	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00		\$14,420.09 \$0.00 \$0.00 \$2,703.77 \$3,605.02 \$1,351.88 \$9,012.56	\$5.98 \$0.00 \$0.00 \$1.12 \$1.49 \$0.56	\$16,883.50 \$0.00 \$0.00 \$3,165.66 \$4,220.87 \$1,582.83	\$3.34 \$0.00 \$0.00 \$0.63 \$0.83 \$2.09	\$7,226.88 \$0.00 \$0.00 \$1,355.04 \$1,806.72 \$677.52	\$0.77 \$0.00 \$0.00 \$0.14 \$0.19 \$0.07	\$39,495.66 \$0.00 \$0.00 \$7,405.44 \$9,873.92 \$3,702.72 \$24,684.79	\$2.73 \$0.00 \$0.00 \$0.51 \$0.68 \$0.26
	SUBTOTAL CONSTRUCTION COST	OST	\$0.00	\$0.00	\$211,344.41	\$92.59	\$247,448.74	\$48.89	\$105,918.96	\$13.76	\$578,858.33	\$37.12
220	CONTINGENCIES DESIGN CONTINGENCY BID CONTINGENCY	10.00%	\$0.00		\$21,134.44	\$0.00	\$24,744.87		\$10,591.90	\$1.13	\$57,885.83	\$4.00
	SUBTOTAL CONSTRUCTION COST	OST ST	\$0.00	\$0.00	\$232,478.86	\$101.34	\$272,193.61	\$48.89	\$116,510.86	\$14.88	\$636,744.16	\$41.12
Z30	ESCALATION See Table	%96:6	\$0.00		\$23,158.78	\$9.00	\$27,115.04		\$11,606.43	\$1.23	\$63,430.37	\$4.38
	TOTAL PROJECT CONSTRUCTION COST	ION COST	\$0.00	\$0.00	\$255,637.64	\$110.94	\$299,308.65		\$128,117.29	\$16.12	\$700,174.53	\$48.38
	TOTAL GROSS AREA				2,413		5,061		9,410		14,471	

CONSTRUCTION PHASING

8.00%

\$56,014 \$ 756,188

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Project:	Backfill Project
	Denver, Colorado
	Metropolitan College of Denver

Owner. merupona Program: RNL Design	metropolitari college di Deliver RNL Design	Deliver	Central Classroom Building	oom Buildin	g	Phase 1				
	Extensive A		Extensive B		Moderate		Minimal		TOTAL COST	OST
	TOTAL COST	COST/SF	TOTAL COST	COST/SF			TOTAL COST	COST/SF	TOTAL COST	COST/SF
AREA	0		0				2,705		2,705	
A10 FOUNDATIONS	\$0.00		\$0.00						\$0.00	\$0.00
A20 BASEMENT CONSTRUCTION	\$0.00		\$0.00						\$0.00	
B10 SUPERSTRUCTURE	\$0.00		\$0.00						\$0.00	\$0.00
B20 EXTERIOR CLOSURE	\$0.00		\$0.00						\$0.00	\$0.00
B30 ROOFING	\$0.00		\$0.00						\$0.00	\$0.00
C10 INTERIOR CONSTRUCTION	\$0.00	\$12.25	\$0.00	\$13.75	\$0.00	\$8.50	\$7,438.75	\$2.75	\$7,438.75	\$2.75
C20 STAIRS	\$0.00								\$0.00	\$0.00
C30 INTERIOR FINISHES	\$0.00	\$13.20	\$0.00	\$8.50	\$0.00	\$6.45	\$21,234.25	\$7.85	\$21,234.25	\$7.85
D10   CONVEYING SYSTEMS	\$0.00			#DIV/0i					\$0.00	
D20 PLUMBING	\$0.00	\$3.50	\$0.00	\$3.50	\$0.00	\$0.00			\$0.00	\$0.00
D30 HVAC	\$0.00	\$20.75	\$0.00	\$21.00	\$0.00	\$3.00			\$0.00	\$0.00
D40 FIRE PROTECTION	\$0.00	\$1.50	\$0.00	\$1.50	\$0.00	\$1.50			\$0.00	\$0.00
D50 ELECTRICAL	\$0.00	\$13.70	\$0.00	\$17.35	\$0.00	\$12.75			\$0.00	\$0.00
E10 EQUIPMENT	\$0.00	\$2.00	\$0.00	\$2.00	\$0.00	\$2.00			\$0.00	\$0.00
E20 FURNISHINGS	\$0.00	\$2.00	\$0.00	\$2.00	\$0.00	\$2.00			\$0.00	\$0.00
F20 SELECTIVE BUILDING DEMOLITION	\$0.00	\$4.00	\$0.00	\$4.50	\$0.00	\$3.50	\$2,028.75	\$0.75	\$2,028.75	\$0.75
F320 HAZARDOUS MATERIAL REMOVAL	\$0.00	\$5.00	\$0.00	\$5.00	\$0.00	\$4.00	\$2,705.00	\$1.00	\$2,705.00	\$1.00
NET CONSTRUCTION COST	\$0.00	\$77.90	\$0.00	#DIN/0!	\$0.00	\$43.70	\$33,406.75	\$12.35	\$33,406.75	\$11.35

Master Document P	Project: Location: Owner: Program:	Backfill Project Denver, Colorac Metropolitan Cc RNL Design	Backfill Project Denver, Colorado Metropolitan College of Denver RNL Design	Denver	Central Classroom Building	oom Buildir	g	Phase 1			November 19, 2009	19, 2009
age 19			ensive A		Extensive B		Moderate		Minimal			COST
	SUBTOTAL CONSTRUCTION COST		TOTAL COST	COST/SF \$77.90	TOTAL COST	COST/SF #DIV/0!	\$0.00	\$43.70	TOTAL COST \$33,406.75	COST/SF \$12.35	TOTAL COST \$33,406.75	COST/SF \$11.35
Z10 OVER GENE	OVERHEAD AND PROFIT GENERAL CONDITIONS	8.00%	\$0.00		\$0.00	\$0.00			\$2,672.54	\$0.99	\$2,672.54	\$0.99
TEMPC DESIGI BOND	TEMPORARY UTILITIES COST ALLOW DESIGN AND CONSULTING FEE BOND	1.50%	\$0.00 \$0.00 \$0.00		\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$50.10	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00
FIELL	FIELD REQUIREMENTS INSURANCE	2.00%	\$0.00		\$0.00	\$0.00			\$668.14	\$0.25	\$668.14	\$0.25
GENE	GENERAL CONTRACTOR FEE	5.00%	\$0.00		\$0.00	\$0.00			\$1,670.34	\$0.62	\$1,670.34	\$0.62
SUBL	SUBTOTAL CONSTRUCTION COST		\$0.00	#DIV/0!	\$0.00	\$0.00	\$0.00	\$43.70	\$39,169.41	\$14.48	\$39,169.41	\$13.48
Z20 CONT DESIC BID C	CONTINGENCIES DESIGN CONTINGENCY BID CONTINGENCY	10.00%	\$0.00		\$0.00	\$0.00 \$0.00 \$0.00	\$0.00		\$3,916.94	\$1.45	\$3,916.94	\$1.45
SUBI	SUBTOTAL CONSTRUCTION COST		\$0.00	#DIV/0!	\$0.00	\$0.00	\$0.00	\$43.70	\$43,086.36	\$15.93	\$43,086.36	\$14.93
Z30 ESCA ESCA	ESCALATION ESCALATION See Table	4.59%	\$0.00		\$0.00	\$0.00	\$0.00		\$1,979.40	\$0.73	\$1,979.40	\$0.73
TOT	TOTAL PROJECT CONSTRUCTION COST	ST	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$45,065.76	\$16.66	\$45,065.76	\$16.66

CONSTRUCTION PHASING 8.00%

**TOTAL GROSS AREA** 

0

2,705

\$3,605 48,671

<del>69</del>

Cumming, LLC

Backfill Project	Denver, Colorado	A to another water town
Project:	Location:	

Denver, Colorado	Metropolitan College of Denver	RNI Design
Location:	Owner:	Program:

Program: RNL Design	RNL Design		Central Classroom Building	oom Buildin	g	Phase 2				
	Extensive A				Moderate		Minimal		TOTAL COST	OST
	TOTAL COST	COST/SF		COST/SF			TOTAL COST	COST/SF	TOTAL COST	COST/SF
AREA	0		14,458		6,239		30,242		626'09	
A10  FOUNDATIONS	\$0.00		\$0.00						\$0.00	\$0.00
A20 BASEMENT CONSTRUCTION	\$0.00		\$0.00						\$0.00	
B10 SUPERSTRUCTURE	\$0.00		\$0.00						\$0.00	\$0.00
B20 EXTERIOR CLOSURE	\$0.00		\$0.00						\$0.00	\$0.00
B30 ROOFING	\$0.00		\$0.00						\$0.00	\$0.00
C10 INTERIOR CONSTRUCTION	\$0.00	\$12.25	\$198,797.50	\$13.75	\$53,031.50	\$8.50	\$83,165.50	\$2.75	\$334,994.50	\$6.58
C20 STAIRS	\$0.00								\$0.00	\$0.00
C30 INTERIOR FINISHES	\$0.00	\$13.20	\$122,893.00	\$8.50	\$40,241.55	\$6.45	\$237,399.70	\$7.85	\$400,534.25	\$7.86
D10   CONVEYING SYSTEMS	\$0.00			\$0.00					\$0.00	
D20 PLUMBING	\$0.00	\$3.50	\$50,603.00	\$3.50		\$0.00			\$50,603.00	\$0.99
D30 HVAC	\$0.00	\$20.75	\$303,618.00	\$21.00	\$18,717.00	\$3.00			\$322,335.00	\$6.33
D40 FIRE PROTECTION	\$0.00	\$1.50	\$21,687.00	\$1.50	\$9,358.50	\$1.50			\$31,045.50	\$0.61
D50 ELECTRICAL	\$0.00	\$13.70	\$250,846.30	\$17.35	\$79,547.25	\$12.75			\$330,393.55	\$6.49
E10 EQUIPMENT	\$0.00	\$2.00	\$28,916.00	\$2.00	\$12,478.00	\$2.00			\$41,394.00	\$0.81
E20 FURNISHINGS	\$0.00	\$2.00	\$28,916.00	\$2.00	\$12,478.00	\$2.00			\$41,394.00	\$0.81
F20 SELECTIVE BUILDING DEMOLITION	\$0.00	\$4.00	\$65,061.00	\$4.50	\$21,836.50	\$3.50	\$22,681.50	\$0.75	\$109,579.00	\$2.15
F320 HAZARDOUS MATERIAL REMOVAL	\$0.00	\$5.00	\$72,290.00	\$5.00	\$24,956.00	\$4.00	\$30,242.00	\$1.00	\$127,488.00	\$2.50
NET CONSTRUCTION COST	\$0.00	\$77.90	\$1,071,337.80	\$79.10	\$272,644.30	\$43.70	\$373,488.70	\$12.35	\$1,789,760.80	\$32.63

	Phase 2	
	Central Classroom Building	
	Backfill Project Denver, Colorado Metropolitan College of Denver RNL Design	
	Project: Location: Owner: Program:	
Ma	ıster Document Pa	19

ge 19		Extensive A		Extensive B		Moderate		Minimal		TOTAL COST	COST
34		TOTAL COST	COST/SF	TOTAL COST	COST/SF			TOTAL COST	COST/SF	TOTAL COST	COST/SF
SUBTOTAL CONSTRUCTION COST		\$0.00	\$77.90	\$1,071,337.80	\$79.10	\$272,644.30	\$43.70	\$373,488.70	\$12.35	\$1,789,760.80	\$32.63
710 OVERHEAD AND PROFIT											
	8.00%	\$0.00		\$85,707.02	\$5.93	\$21,811.54	\$3.50	\$29,879.10	\$0.99	\$143,180.86	\$2.81
TEMPORARY UTILITIES COST ALLOW		\$0.00		\$0.00		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00
DESIGN AND CONSULTING FEE		\$0.00		\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BOND	1.50%	\$0.00		\$16,070.07	\$1.11	\$4,089.66	\$0.66	\$5,602.33	\$0.19	\$26,846.41	\$0.53
FIELD REQUIREMENTS	2.00%	\$0.00		\$21,426.76	\$1.48	\$5,452.89	\$0.87	\$7,469.77	\$0.25	\$35,795.22	\$0.70
INSURANCE	0.75%	\$0.00		\$8,035.03		\$2,044.83	\$0.33	\$2,801.17	\$0.09	\$13,423.21	\$0.26
GENERAL CONTRACTOR FEE	2.00%	\$0.00		\$53,566.89	\$3.71	\$13,632.22	\$2.19	\$18,674.44	\$0.62	\$89,488.04	\$1.76
SUBTOTAL CONSTRUCTION COST		\$0.00	\$0.00	\$1,256,143.57	\$91.88	\$319,675.44	\$51.24	\$437,915.50	\$14.48	\$2,098,494.54	\$38.69
Z20   CONTINGENCIES DESIGN CONTINGENCY BID CONTINGENCY	10.00%	\$0.00		\$125,614.36	\$8.69	\$31,967.54		\$43,791.55	\$1.45	\$209,849.45	\$4.12
SUBTOTAL CONSTRUCTION COST		\$0.00	\$0.00	\$1,381,757.93	\$100.57	\$351,642.99	\$51.24	\$481,707.05	\$15.93	\$2,308,343.99	\$42.81
Z30 ESCALATION See Table	96.6	\$0.00		\$137,646.21	\$9.52	\$35,029.53		\$47,986.08	\$1.59	\$229,949.69	\$4.51
TOTAL PROJECT CONSTRUCTION COST	ST	\$0.00	\$0.00	\$1,519,404.14	\$110.09	\$386,672.51		\$529,693.13	\$17.52	\$2,538,293.68	\$49.83
TOTAL GROSS AREA		0		14,458		6,239		30,242		50,939	

CONSTRUCTION PHASING

8.00%

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Backfill Project	Denver, Colorado	Metropolitan College of Denver	RNL Design
Project:	Location:	Owner:	Program:

Program: RNL Design	sign				Art Building	Phase 2				
	Extensive A		Extensive B		Moderate		Minimal		TOTAL COST	COST
	TOTAL COST	COST/SF		COST/SF			TOTAL COST	COST/SF	TOTAL COST	COST/SF
AREA	0		1,100		-		2,242	0	3,342	
A10   FOUNDATIONS	\$0.00		\$0.00						\$0.00	\$0.00
A20 BASEMENT CONSTRUCTION	\$0.00		\$0.00						\$0.00	
B10 SUPERSTRUCTURE	\$0.00		\$0.00						\$0.00	\$0.00
B20 EXTERIOR CLOSURE	\$0.00		\$0.00						\$0.00	\$0.00
B30 ROOFING	\$0.00		\$0.00						\$0.00	\$0.00
C10 INTERIOR CONSTRUCTION	\$0.00	\$12.25	\$15,125.00	\$13.75	\$0.00	\$8.50	\$6,165.50	\$2.75	\$21,290.50	\$6.37
C20 STAIRS	\$0.00								\$0.00	\$0.00
C30 INTERIOR FINISHES	\$0.00	\$13.20	\$9,350.00	\$8.50	\$0.00	\$6.45	\$17,599.70	\$7.85	\$26,949.70	\$8.06
D10   CONVEYING SYSTEMS	\$0.00			\$0.00					\$0.00	
D20 PLUMBING	\$0.00	\$3.50	\$3,850.00	\$3.50		\$0.00			\$3,850.00	\$1.15
D30 HVAC	\$0.00	\$20.75	\$23,100.00	\$21.00	\$0.00	\$3.00			\$23,100.00	\$6.91
D40 FIRE PROTECTION	\$0.00	\$1.50	\$1,650.00	\$1.50	\$0.00	\$1.50			\$1,650.00	\$0.49
D50 ELECTRICAL	\$0.00	\$13.70	\$19,085.00	\$17.35	\$0.00	\$12.75			\$19,085.00	\$5.71
E10 EQUIPMENT	\$0.00	\$2.00	\$2,200.00	\$2.00	\$0.00	\$2.00			\$2,200.00	\$0.66
E20 FURNISHINGS	\$0.00	\$2.00	\$2,200.00	\$2.00	\$0.00	\$2.00			\$2,200.00	\$0.66
F20 SELECTIVE BUILDING DEMOLITION	\$0.00	\$4.00	\$4,950.00	\$4.50	\$0.00	\$3.50	\$1,681.50	\$0.75	\$6,631.50	\$1.98
F320 HAZARDOUS MATERIAL REMOVAL	\$0.00	\$5.00	\$5,500.00	\$5.00	\$0.00	\$4.00	\$2,242.00	\$1.00	\$7,742.00	\$2.32
NET CONSTRUCTION COST	\$0.00	\$77.90	\$81,510.00	\$79.10	\$0.00	\$43.70	\$27,688.70	) \$12.35	\$114,698.70	\$32.00

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Master Document P	Project: Location: Owner: Program:	Backfill Project Denver, Colorac Metropolitan Cc RNL Design	Backfill Project Denver, Colorado Metropolitan College of Denver RNL Design	Denver			Art Building	Phase 2			November 19, 2009	9, 2009
age 1			Extensive A		Extensive B		Moderate		Minimal		TOTAL COST	OST
96			Н	COST/SF	TOTAL COST	COST/SF			COST	COST/SF	TOTAL COST	COST/SF
	SUBTOTAL CONSTRUCTION COST		00.0\$	\$77.90	\$81,510.00	\$79.10	\$0.00	\$43.70	\$27,688.70	\$12.35	\$114,698.70	\$32.00
Z10	OVERHEAD AND PROFIT GENERAL CONDITIONS TEMPORARY UTILITIES COST ALLOW DESIGN AND CONSULTING FEE BOND FIELD REQUIREMENTS INSURANCE GENERAL CONTRACTOR FEE	8.00% 1.50% 2.00% 0.75% 5.00%	00.08 00.08 00.08 00.08		\$6,520.80 \$0.00 \$1,222.65 \$1,630.20 \$611.33 \$4,075.50	\$5.93 \$0.00 \$0.00 \$1.11 \$1.14 \$0.56	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	#DIV/OI #DIV/OI #DIV/OI #DIV/OI #DIV/OI #DIV/OI	\$2,215.10 \$0.00 \$0.00 \$415.33 \$553.77 \$207.67 \$1,384.44	\$0.99 \$0.00 \$0.00 \$0.19 \$0.25 \$0.25	\$9,175.90 \$0.00 \$1,720.48 \$2,293.97 \$860.24 \$5,734.94	\$2.75 \$0.00 \$0.00 \$0.51 \$0.26 \$0.26
	SUBTOTAL CONSTRUCTION COST		\$0.00	#DIV/0!	\$95,570.48	\$91.88	\$0.00	#DIV/0!	\$32,465.00	\$14.48	\$134,484.23	\$37.92
Z20	CONTINGENCIES DESIGN CONTINGENCY BID CONTINGENCY	10.00%	00.0\$		\$9,557.05	\$0.00	\$0.00		\$3,246.50	\$1.45	\$13,448.42	\$4.05
	SUBTOTAL CONSTRUCTION COST		\$0.00	#DIV/0!	\$105,127.52	\$100.57	\$0.00	#DIV/0!	\$35,711.50	\$15.93	\$147,932.65	\$41.95
Z30	ESCALATION   ESCALATION See Table	9:96%	\$0.00		\$10,472.46	\$0.00	\$0.00		\$3,557.46	\$1.59	\$14,736.57	\$4.41
	TOTAL PROJECT CONSTRUCTION COST	COST	00.0\$	\$0.00	\$115,599.98	\$110.09	\$0.00		\$39,268.96	\$17.52	\$162,669.22	\$48.67
	TOTAL GROSS AREA		\$0.00		1,100		\$0.00		2,242		3,342	

\$11,387 **\$ 174,056** 

7.00%

CONSTRUCTION PHASING

Backfill Project	Denver, Colorado	Metropolitan College of Denver
Project:	Location:	Owner:

Program: RNL Design	College of	Deliver		King Building	ing	Phase 2				
	Extensive A		Extensive B		Moderate		Minimal		TOTAL COST	OST
	TOTAL COST	COST/SF	TOTAL COST	COST/SF			TOTAL COST	COST/SF	TOTAL COST	COST/SF
AREA	1,700		0				7,497		7,497	
A10 FOUNDATIONS	\$0.00		\$0.00						\$0.00	\$0.00
A20 BASEMENT CONSTRUCTION	\$0.00		\$0.00						\$0.00	
B10 SUPERSTRUCTURE	\$0.00		\$0.00						\$0.00	\$0.00
B20 EXTERIOR CLOSURE	\$0.00		\$0.00						\$0.00	\$0.00
B30 ROOFING	\$0.00		\$0.00						\$0.00	\$0.00
C10 INTERIOR CONSTRUCTION	\$20,825.00	\$12.25	\$0.00	\$13.75	\$0.00	\$8.50	\$20,616.75	\$2.75	\$41,441.75	\$4.51
C20 STAIRS	\$0.00								\$0.00	\$0.00
C30 INTERIOR FINISHES	\$22,440.00	\$13.20	\$0.00	\$8.50	\$0.00	\$6.45	\$58,851.45	\$7.85	\$81,291.45	\$8.84
D10   CONVEYING SYSTEMS	\$0.00			#DIV/0i					\$0.00	
D20 PLUMBING	\$5,950.00	\$3.50	\$0.00	\$3.50		\$0.00			\$5,950.00	\$0.65
D30 HVAC	\$35,275.00	\$20.75	\$0.00	\$21.00	\$0.00	\$3.00			\$35,275.00	\$3.84
D40 FIRE PROTECTION	\$2,550.00	\$1.50	\$0.00	\$1.50	\$0.00	\$1.50			\$2,550.00	\$0.28
D50 ELECTRICAL	\$23,290.00	\$13.70	\$0.00	\$17.35	\$0.00	\$12.75			\$23,290.00	\$2.53
EQUIPMENT	\$3,400.00	\$2.00	\$0.00	\$2.00	\$0.00	\$2.00			\$3,400.00	\$0.37
E20 FURNISHINGS	\$3,400.00	\$2.00	\$0.00	\$2.00	\$0.00	\$2.00			\$3,400.00	\$0.37
F20 SELECTIVE BUILDING DEMOLITION	\$6,800.00	\$4.00	\$0.00	\$4.50	\$0.00	\$3.50	\$5,622.75	\$0.75	\$12,422.75	\$1.35

\$0.00

\$0.00

\$0.00 \$8.84 \$0.65

\$0.28 \$2.53 \$1.35 \$1.74

\$15,997.00

\$1.00

\$7,497.00

\$4.00

\$0.00

\$5.00

\$0.00

\$5.00

\$8,500.00

HAZARDOUS MATERIAL REMOVAL

F320

\$0.00

Backfill Project Denver, Colorado Metropolitan College of Denver RNL Design
Extensive B
COST/SF TOTAL COST COST/SF
<b>00.0\$</b> 06.77\$
00.0%
\$0.00
\$0.00
\$155,274.18 \$0.00 <b>\$0.00</b>
\$0.00
<b>\$170,801.59</b> \$0.00 <b>\$0.00</b>
\$17,014.70
\$187,816.29 \$0.00 \$0.00 <b>\$0.00</b>
•

7.00% CONSTRUCTION PHASING

\$22,339 <mark>\$ 341,466</mark>

	Project: Location: Owner: Program:	Backfill Project Denver, Colorado Metropolitan Colle RNL Design	Backfill Project Denver, Colorado Metropolitan College of Denver RNL Design	Denver			Tech Building	bü	Phase 2			_		, VOOR
			Extensive A		Extensive B			Moderate		Minimal			TOTAL COST	OST
		•	TOTAL COST	COST/SF	4		COST/SF			TOTAL COST	COST/SF	TOT,	TOTAL COST (	COST/SF
AREA			0			0		1,829		0			1,829	
A10 FOUNDATIONS			· •		<del>\$</del>	ı						↔		
A20 BASEMENT CONSTRUCTION	NSTRUCTION		· •		<del>\$</del>	ı						↔		
B10 SUPERSTRUCTURE	URE		· •		↔	1						↔		1
B20 EXTERIOR CLOSURE	SURE		₩		↔							↔		1
B30 ROOFING			· •		↔							↔		
C10 INTERIOR CONSTRUCTION	STRUCTION		∽	\$ 12.25	↔		13.75	15,547	8.50	\$0	2.75	↔	15,547	8.50
C20 STAIRS			₩									↔	1	1
C30 INTERIOR FINISHES	HES		₩	13.20	↔		8.50	11,797	6.45	\$0	7.85	€	11,797	6.45
D10   CONVEYING SYSTEMS	STEMS		₩				#DIV/0i					↔		
D20 PLUMBING			•	3.50	↔		3.50					↔		ı
D30 HVAC			₩	20.75	↔	1	21.00	5,487	3.00			↔	5,487	3.00
D40 FIRE PROTECTION	NO		· •	1.50	<del>\$</del>	ı	1.50	2,744	1.50			↔	2,744	1.50
D50 ELECTRICAL			' \$	13.70	<del>\$</del>		17.35	23,320	12.75			↔	23,320	12.75
EQUIPMENT			∽	2.00	↔		2.00	3,658	2.00			↔	3,658	2.00
E20 FURNISHINGS			چ	\$ 2.00	<del>\$</del>		2.00	3,658	2.00			↔	3,658	2.00
F20 SELECTIVE BUI	SELECTIVE BUILDING DEMOLITION		₩	\$ 4.00	↔	ı	4.50	6,402	3.50	0\$	0.75	€>	6,402	3.50
F320 HAZARDOUS M	HAZARDOUS MATERIAL REMOVAL		' \$	\$ 5.00	₩	,	5.00	7,316	4.00	0\$	1.00	€	7,316	4.00
NET CONSTRUCTION	CTION COST	<b>3</b> ,	- \$	77.90	<del>\$</del>	<u> </u>		79 <mark>,927</mark>	43.70	0\$	12.35	<del>6</del>	79,927	39.70

М															
aster Document Pa	Project: Location: Owner: Program:	Backfill Project Denver, Colorac Metropolitan Cc RNL Design	Backfill Project Denver, Colorado Metropolitan College of Denv RNL Design	of Denver	_		Tech Building	Jing Jing	Phase 2				Nove	November 19, 2009	5009
ge 2			Extensive A		EXT	Extensive B		Moderate		Minimal			2	TOTAL COST	T.
00			TOTAL COST	300	TOT TOT	TOTAL COST	COST/SF			TOTAL COST		COST/SF	TOTAL COST	-	COST/SF
	SUBTOTAL CONSTRUCTION COST		- \$	77.	2.90 \$		•	79,927	43.70		0\$	12.35	62 \$	79,927	39.70
210	OVERHEAD AND PROFIT GENERAL CONDITIONS TEMPORARY UTILITIES COST ALLOW DESIGN AND CONSULTING FEE BOND		<del>७ ७ ७ ७ ७</del>		<del>\$\$\text{\$\exitt{\$\exitt{\$\text{\$\exitt{\$\text{\$\text{\$\texittit{\$\text{\$\text{\$\text{\$\text{\$\texitt{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\texitt{\$\exititit{\$\text{\$\texitt{\$\text{\$\text{\$\text{\$\text{\$\text{\$\tex</del>	1 1 1 1	1 1 1 1	\$ 6,394 \$ - \$ - \$ 1,199	3.50	မ မ မ မ မ			Ø ← ·	6,394	3.50
	FIELD REQUIREMENTS INSURANCE GENERAL CONTRACTOR FEE	2.00% 0.75% 5.00%			÷ • •			\$ 1,599 \$ 599 \$ 3,996	0.87 0.33 2.19	<del>୬</del> ୫ ୫		i0/\land #DI\/\0i #		1,599 599 3,996	0.87 0.33 2.19
	SUBTOTAL CONSTRUCTION COST		- \$	i0//\IQ#	<mark>\$</mark> ;0			\$93,715	51.24		\$0 #E	#DIV/0!	\$ 93 <sup>°</sup>	93 <mark>,715</mark>	47.24
Z20	CONTINGENCIES DESIGN CONTINGENCY BID CONTINGENCY	10.00%	. ↔		₩	1		\$9,371			□#  0\$	i0/\\IQ#	ര് <del>ഴ</del>	9,371	5.12
	SUBTOTAL CONSTRUCTION COST		<del>-</del>	i0//IO#	<mark>\$</mark> i0	•	- \$	\$103,086	\$ 51.24		\$0 #E	#DIV/0!	\$ 103	103,086	52.36
Z30	ESCALATION ESCALATION See Table	%96·6	. ↔		\$	1		\$10,269			\$0		\$ 10,	10,269	5.61
	TOTAL PROJECT CONSTRUCTION COST	SOST	- \$	- \$	<del>\$</del>	•	- \$	\$113,355			\$ 0\$	•	\$ 113	113,355	61.98
	TOTAL GROSS AREA			0		-		1,829			0		1,	1,829	

CONSTRUCTION PHASING

7.00%

\$7,935 **\$ 121,290** 

Cumming, LLC

		Backfill Pro	gram Plan							Date		11/19/2009	
	Project: Location Owner	Backfill Pro Denver, Col Metropolita	•	enver									
	Program:	RNL Design	1					Ext	ensive A			1	
		Ratio	Elei	mental	Cost		Element	Amo	ount	Rate per	GSI	F	
Code	Element	to GSF	Quantity		Unit Rate		Sub-Total		Total	Sub-Total		Total	%
A10	FOUNDATIONS							\$	-		\$	-	0.0
A1010	Standard Foundations	1.000	1	sffp	0.00		-			0.00			
A1020	Special Foundations	1.000	1	sffp	0.00	\$	-			0.00			
A1030	Slab on Grade	1.000	1	sffp	0.00	\$	-	•		0.00	•		0.0
<b>A20</b> A2010	BASEMENT CONSTRUCTION  Basement Excavation	1.000	1	sffp	0.00	\$		\$	-	0.00	\$	-	0.0
A2010	Basement Walls	1.000	1	sffp	0.00	\$	-			0.00			
B10	SUPERSTRUCTURE	1.000	<u> </u>	onp	0.00	Ψ		\$	-	0.00	\$	-	0.0
B1010	Floor Construction	1.000	1	sff	0.00	\$	-	•		0.00	Ť		
B1020	Roof Construction	1.000	1	sffp	0.00	\$	-			0.00			
B20	EXTERIOR CLOSURE							\$	-		\$	-	0.0
B2010	Exterior Walls metal panel and brick 60%	1.000	1	sf	0.00	\$	-			0.00			
B2020	Exterior Windows Storefront and Curtaiwall	1.000	1	sf	0.00	\$	-			0.00			
B2030	Exterior Doors AL/GL and HM	1.000	1	sf	0.00	\$	-			0.00			
B30	ROOFING							\$	-		\$	-	0.0
B3010	Roof Coverings EPDM Membrane Terrace	1.000	1	sf	0.00	\$	-			0.00			
B3020	Roof Openings	1.000	1	sf	0.00	\$	-	•	40.05	0.00	•	40.05	40.0
C10	INTERIOR CONSTRUCTION	1.000	4	off	6.50	6	6.50	\$	12.25	6.50	\$	10.25	13.2
C1010	Partitions 5/8" GWB each side with insulation Extend partitions to structure	1.000 1.000	1	sff sff	6.50 2.00	\$	6.50 2.00			6.50			
C1020	Interior Doors solid core 6'-8" transom & side	1.000	1	sff	2.00	\$	2.00			2.00			
C1030	Specialties I	1.000	. 1	sff	1.75	\$	1.75			1.75			
C20	STAIRCASES	11000	<u> </u>	0	0	Ť	0	\$	-	0	\$	-	0.0
C2010	Stair Construction	1.000	1	sff	0.00	\$	-			0.00			
C2020	Stair Finishes	1.000	1	sff	0.00	\$	-			0.00			
C30	INTERIOR FINISHES							\$	13.20		\$	13.20	16.9
C3010	Wall Finishes	1.000	1	sff	6.45	\$	6.45			6.45			
C3020	Floor Finishes	1.000	1	sff	4.50	\$	3.25			3.25			
C3030	Ceiling Finishes	1.000	1	sff	3.50	\$	3.50			3.50			
D10	CONVEYING SYSTEMS				00 500 00	_		\$	-	0.00	\$	-	0.0
D1010	Elevators 4 stops hydraulic	1 000	- 1	stop	36,500.00	\$	-			0.00			
D1020 D1030	Escalators & Moving Walks Material Handling Systems	1.000 1.000	1	sff sff	0.00	\$	-			0.00 0.00			
D20	PLUMBING	1.000	·	311	0.00	Ψ		\$	3.50	0.00	\$	3.50	4.5
D2010	Plumbing Fixtures	1.000	1	sff	3.50	\$	3.50		0.00	3.50	Ť	0.00	
D2020	Domestic Water Distribution	1.000	1	sff	0.00	\$	-			0.00			
D2030	Sanitary Waste	1.000	1	sff	0.00	\$	-			0.00			
D2040	Rain Water Drainage	1.000	1	sff	0.00	\$	-			0.00			
D2050	Special Plumbing Systems	1.000	1	sff	0.00	\$	-			0.00			
D30	HVAC							\$	20.75		\$	20.75	26.6
D3010	Energy Supply	1.000	1	sff	7.50		7.50			7.50			
	Heat Generating Systems	1.000	1	sff	0.00		-			0.00			
D3030	Cooling Generating Systems	1.000	1	sff	0.00		40.05			0.00			
D3040 D3050	Code Requirements Terminal & Package Units	1.000 1.000	<u>1</u> 1	sff sff	10.25 0.00	\$	10.25			10.25 0.00			
D3050	Controls & Instrumentation	1.000	1	sff	2.00	\$	2.00			2.00			
D3070	Special HVAC Systems & Equipment	1.000	1	sff	1.00		1.00			1.00			
D3080	Systems Testing & Balancing	1.000	1	sff	0.00	\$	-			0.00			
D40	FIRE PROTECTION							\$	1.50		\$	1.50	1.9
D4010	Fire Protection Sprinkler System	1.000	1	sff	1.50	\$	1.50			1.50			
D4020	Stand-Pipe & Hose Systems	1.000	1	sff	0.00		-			0.00			
D4030	Fire Protection Systems	1.000	1	sff	0.00	\$	-			0.00			
D4040	Special Fire Protection Systems	1.000	1	sff	0.00	\$	-			0.00			
	ELECTRICAL							\$	13.70		\$	13.70	17.6
D50				off	2.95	Φ	2.95			2.95			
<b>D50</b> D5010	Electrical Service & Distribution	1.000	1	sff									
<b>D50</b> D5010 D5020	Lighting & Branch Wiring	1.000	1	sff	8.00	\$	8.00			8.00			
<b>D50</b> D5010						\$ \$							

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		Backfill Pro	•						Date	1	11/19/2009	
	Project: Location	Backfill Pro	•									
	Owner	Denver, Col Metropolita	orado n College of D	enver								
	Program:	RNL Design	_				Ext	ensive A			1	
		Ratio	Eler	mental	Cost	Element	Am	ount	Rate per	GSF		
Code	Element	to GSF	Quantity		Unit Rate	Sub-Total		Total	Sub-Total		Total	%
E10	EQUIPMENT						\$	2.00		\$	2.00	2.6
E1010	Commercial Equipment	1.000	1	sff	0.00	\$ -			0.00			
E1020	Institutional Equipment	1.000	1	sff	2.00	\$ 2.00			2.00			
E1030	Vehicular Equipment	1.000	1	sff	0.00	\$ -			0.00			
E1040	Other Equipment	1.000	1	sff	0.00	\$ -			0.00			
E20	FURNISHINGS						\$	2.00		\$	2.00	2.6
E2010	Fixed Furnishings	1.000	1	sff	2.00	\$ 2.00			2.00			
E2020	Movable Furnishings	1.000	1	sff	0.00	\$ -			0.00			
F10	SPECIAL CONSTRUCTION						\$	-		\$	-	0.0
F1010	Special Structures	1.000	1	sff	0.00	\$ -			0.00			
F1020	Integrated Construction	1.000	1	sff	0.00	\$ -			0.00			
F1030	Special Construction Systems	1.000	1	sff	0.00	\$ -			0.00			
F1040	Special Facilities	1.000	1	sff	0.00	\$ -			0.00			
F1050	Special Controls & Instrumentation	1.000	1	sff	0.00	\$ -			0.00			
F20	SELECTIVE BUILDING DEMOLITION						\$	9.00		\$	9.00	11.6
F2010	Building Elements Demolition	1.000	1	sff	4.00	4.00			4.00			
F2020	Hazardous Components Abatement	1.000	1	sff	5.00	\$ 5.00			5.00			
	NET BUILDING COST						\$	77.90		\$	77.90	100.0
G5020	Other Site Systems & Equipment					\$ -			0.00			
	NET CONSTRUCTION COST					· · · · · ·	\$	77.90		\$	77.90	100.0

		Backfill Pro	gram Plan							Date		11/19/2009	
	Project: Location Owner	Backfill Pro Denver, Col Metropolita	-	Denver									
	Program:	RNL Design	1					Ext	ensive B			1	
		Ratio	Ele	mental	Cost		Element	Amo	ount	Rate per	GSF		
Code	Element	to GSF	Quantity		Unit Rate		Sub-Total		Total	Sub-Total		Total	%
A10	FOUNDATIONS							\$	-		\$	-	0.0
A1010	Standard Foundations	1.000	1	sffp	0.00		-			0.00			
A1020	Special Foundations	1.000	1	sffp	0.00	\$	-			0.00			
A1030	Slab on Grade	1.000	1	sffp	0.00	\$	-	•		0.00	•		0.0
<b>A20</b> A2010	BASEMENT CONSTRUCTION  Basement Excavation	1.000	1	sffp	0.00	\$		\$	-	0.00	\$	-	0.0
A2020	Basement Walls	1.000	1	sffp	0.00	\$	-			0.00			
B10	SUPERSTRUCTURE	1.000	·	опр	0.00	Ψ		\$	-	0.00	\$	-	0.0
B1010	Floor Construction	1.000	1	sff	0.00	\$	-			0.00	Ť		
B1020	Roof Construction	1.000	1	sffp	0.00	\$	-			0.00			
B20	EXTERIOR CLOSURE							\$	-		\$	-	0.0
B2010	Exterior Walls metal panel and brick 60%	1.000	1	sf	0.00	\$	-			0.00			
B2020	Exterior Windows Storefront and Curtaiwall	1.000	1	sf	0.00	\$	-			0.00			
B2030	Exterior Doors AL/GL and HM	1.000	1	sf	0.00	\$	-			0.00			
B30	ROOFING							\$	-		\$	-	0.0
B3010	Roof Coverings EPDM Membrane Terrace	1.000	1	sf	0.00	\$	-			0.00			
B3020	Roof Openings	1.000	1	sf	0.00	\$	-	•	44.00	0.00	Φ.	44.50	44.4
C10	INTERIOR CONSTRUCTION	1.000	1	off	7.50	6	7.50	\$	14.00	7.50	\$	11.50	14.4
C1010	Partitions 5/8" GWB each side with insulation Extend partitions to structure	1.000 1.000	1	sff sff	7.50 2.50	\$	7.50 2.50			7.50			
C1020	Interior Doors solid core 6'-8" transom & side	1.000	1	sff	2.25	\$	2.25			2.25			
C1030	Specialties	1.000	. 1	sff	1.75	\$	1.75			1.75			
C20	STAIRCASES	11000	·	0	0	Ť	0	\$	-	0	\$	-	0.0
C2010	Stair Construction	1.000	1	sff	0.00	\$	-			0.00			
C2020	Stair Finishes	1.000	1	sff	0.00	\$	-			0.00			
C30	INTERIOR FINISHES							\$	8.85		\$	8.85	11.1
C3010	Wall Finishes Paint	1.000	1	sff	6.45	\$	1.85			1.85			
C3020	Floor Finishes	1.000	1	sff	4.50	\$	3.50			3.50			
C3030	Ceiling Finishes	1.000	1_	sff	3.50	\$	3.50			3.50			
D10	CONVEYING SYSTEMS							\$	-		\$	-	0.0
D1010	Elevators 4 stops hydraulic	-	- ,	stop	36,500.00	\$	-			0.00			
D1020 D1030	Escalators & Moving Walks Material Handling Systems	1.000 1.000	1 1	sff sff	0.00	\$	-			0.00 0.00			
D1030	PLUMBING	1.000		311	0.00	Ψ	-	\$	3.50	0.00	\$	3.50	4.4
D2010	Plumbing Fixtures	1.000	1	sff	3.50	\$	3.50	ų.	0.00	3.50	Ψ	0.00	
D2020	Domestic Water Distribution	1.000	1	sff	0.00	\$	-			0.00			
D2030	Sanitary Waste	1.000	1	sff	0.00	\$	-			0.00			
D2040	Rain Water Drainage	1.000	1	sff	0.00	\$	-			0.00			
D2050	Special Plumbing Systems	1.000	1	sff	0.00	\$	-			0.00			
D30	HVAC							\$	21.00		\$	21.00	26.3
	Energy Supply	1.000	1	sff	7.50		7.50			7.50			
	Heat Generating Systems	1.000	1	sff	0.00		-			0.00			
D3030	Cooling Generating Systems	1.000	1	sff	0.00		40.05			0.00			
D3040 D3050	Code Requirements Terminal & Package Units	1.000 1.000	1 1	sff sff	10.25 0.00	\$	10.25			10.25 0.00			
D3050	Controls & Instrumentation	1.000	1	sff	2.00	\$	2.00			2.00			
D3000	Special HVAC Systems & Equipment	1.000	1	sff	1.25		1.25			1.25			
D3080	Systems Testing & Balancing	1.000	1	sff	0.00	\$	-			0.00			
D40	FIRE PROTECTION							\$	1.50		\$	1.50	1.9
D4010	Fire Protection Sprinkler System	1.000	1	sff	1.50	\$	1.50			1.50			
D4020	Stand-Pipe & Hose Systems	1.000	1	sff	0.00		-			0.00			
D4030	Fire Protection Systems	1.000	1	sff	0.00	\$	-			0.00			
D4040	Special Fire Protection Systems	1.000	1	sff	0.00	\$	-			0.00			
D50	ELECTRICAL							\$	17.35		\$	17.35	21.8
D5010	Electrical Service & Distribution	1.000	1	sff	2.95		2.95			2.95			
		1.000	1	sff	9.15	- S	9.15			9.15			
D5020	Lighting & Branch Wiring												
	Lighting & Branch Wiring Communication & Security Systems Special Electrical Systems	1.000	1 1	sff sff	1.75 3.50	\$	1.75 3.50			1.75 3.50			

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		Backfill Prog	gram Plan						Date	1	11/19/2009	
	Project: Location Owner	Backfill Pro Denver, Col Metropolitar		enver)								
	Program:	RNL Design					Exte	ensive B			1	
		Ratio	Eler	mental	Cost	Element	Amo	ount	Rate per	GSF		
Code	Element	to GSF	Quantity		Unit Rate	Sub-Total		Total	Sub-Total		Total	%
E10	EQUIPMENT						\$	2.00		\$	2.00	2.5
E1010	Commercial Equipment	1.000	1	sff	0.00	\$ -			0.00			
E1020	Institutional Equipment	1.000	1	sff	2.00	\$ 2.00			2.00			
E1030	Vehicular Equipment	1.000	1	sff	0.00	\$ -			0.00			
E1040	Other Equipment	1.000	1	sff	0.00	\$ -			0.00			
E20	FURNISHINGS						\$	2.00		\$	2.00	2.5
E2010	Fixed Furnishings	1.000	1	sff	2.00	\$ 2.00			2.00			
E2020	Movable Furnishings	1.000	1	sff	0.00	\$ -			0.00			
F10	SPECIAL CONSTRUCTION						\$	-		\$	-	0.0
F1010	Special Structures	1.000	1	sff	0.00	\$ -			0.00			
F1020	Integrated Construction	1.000	1	sff	0.00	\$ -			0.00			
F1030	Special Construction Systems	1.000	1	sff	0.00	\$ -			0.00			
F1040	Special Facilities	1.000	1	sff	0.00	\$ -			0.00			
F1050	Special Controls & Instrumentation	1.000	1	sff	0.00	\$ -			0.00			
F20	SELECTIVE BUILDING DEMOLITION						\$	9.50		\$	9.50	11.9
F2010	Building Elements Demolition	1.000	1	sff	4.50	4.50			4.50			
F2020	Hazardous Components Abatement	1.000	1	sff	5.00	\$ 5.00			5.00			
	NET BUILDING COST						\$	79.70		\$	79.70	100.
G5020	Other Site Systems & Equipment					\$ -			0.00			
	NET CONSTRUCTION COST						\$	79.70		\$	79.70	100.

Extensive B 5 of 32

		Backfill Pro	gram Plan							Date		11/19/2009	
	Project: Location	Backfill Pro Denver, Col	ject lorado										
	Owner		n College of Do	enver					_				
	Program:	RNL Design Ratio		nental	Coot		Element	Amo	derate	Rate per	CS	1	
Code	Element	to GSF	Quantity	ientai	Unit Rate		Sub-Total	Amo	Total	Sub-Total	GS	Total	%
A10	FOUNDATIONS	10 001	Quantity		Offic (Nate		Sub-Total	\$	-	Sub-Total	\$	Total -	0.0
A1010	Standard Foundations	1.000	1	sffp	0.00	\$	-	Ė		0.00	Ė		
A1020	Special Foundations	1.000	1	sffp	0.00	\$	-			0.00			
A1030	Slab on Grade	1.000	1	sffp	0.00	\$	-			0.00			
A20	BASEMENT CONSTRUCTION							\$			\$	-	0.0
A2010	Basement Excavation	1.000	1	sffp	0.00	\$	-			0.00			
A2020	Basement Walls	1.000	1	sffp	0.00	\$	-	Φ.		0.00	Φ.		0.0
<b>B10</b> B1010	SUPERSTRUCTURE Floor Construction	1.000	1	sff	0.00	\$		\$	-	0.00	\$	-	0.0
B1010	Roof Construction	1.000	1	sffp	0.00	\$	-			0.00			
B20	EXTERIOR CLOSURE	1.000		SIIP	0.00	φ	-	\$		0.00	\$		0.0
B2010	Exterior Walls	1.000	1	sf	0.00	\$		Ĺ		0.00	Ť		
	Mechanical Screen	1.000	1	sf	0.00	\$	-						
B2020	Exterior Windows	1.000	1	sf	0.00	\$	-			0.00			
B2030	Exterior Doors AL/GL and HM	1.000	1	sf	0.00	\$	-			0.00			
B30	ROOFING							\$	-		\$	-	0.0
B3010	Roof Coverings EPDM Membrane	1.000	1	sf	0.00	\$	-			0.00			
B3020	Roof Openings	1.000	1	sf	0.00	\$	-	•	0.50	0.00	_	0.50	45.0
<b>C10</b> C1010	INTERIOR CONSTRUCTION Partitions 5/8" GWB each side with insulation	1.000	1	sff	5.00	\$	3.00	\$	6.50	3.00	\$	6.50	15.6
C1010	Interior Doors single and pair	1.000	1	sff	2.00	\$	2.00			2.00			
C1030	Specialties	1.000	1	sff	1.50	\$	1.50			1.50			
C20	STAIRCASES	11000		0	1.00	Ť	1.00	\$		1.00	\$	-	0.0
C2010	Stair Construction	1.000	1	sff	0.00	\$	-			0.00			
C2020	Stair Finishes	1.000	1	sff	0.00	\$	-			0.00			
C30	INTERIOR FINISHES							\$	6.45		\$	6.45	15.5
C3010	Wall Finishes	1.000	1	sff	6.45		0.95			0.95			
C3020	Floor Finishes	1.000	1	sff	3.25	\$	3.25			3.25			
C3030	Ceiling Finishes	1.000	1	sff	3.25	\$	2.25	\$		2.25	\$		0.0
<b>D10</b> D1010	CONVEYING SYSTEMS Elevators 2 stops hydraulic	2.000	2	stop	0.00	\$	_	Ф	-	0.00	Ф	-	0.0
D1010	Escalators & Moving Walks	1.000	1	sff	0.00	\$	-			0.00			
D1030	Material Handling Systems	1.000	1	sff	0.00	\$	-			0.00			
D20	PLUMBING							\$	-		\$	-	0.0
D2010	Plumbing Fixtures	1.000	1	sff	0.00	\$	-			0.00			
D2020	Domestic Water Distribution	1.000	1	sff	0.00	\$	-			0.00			
D2030	Sanitary Waste	1.000	1	sff	0.00	\$	-			0.00			
D2040	Rain Water Drainage	1.000	1	sff	0.00	\$	-			0.00			
D2050	Special Plumbing Systems  HVAC	1.000	1	sff	0.00	\$	-	\$	3.00	0.00	\$	3.00	7.2
D3010	Energy Supply	1.000	1	sff	2.00	\$	2.00	Ψ	3.00	2.00	ψ	3.00	1.4
	Heat Generating Systems	1.000	1	sff	0.00		-			0.00			
D3030	Cooling Generating Systems	1.000	1	sff	0.00	\$	-			0.00			
D3040	Distribution Systems	1.000	1	sff	0.00	\$	-			0.00			
D3050	Terminal & Package Units	1.000	1	sff	0.00		-			0.00			
D3060	Controls & Instrumentation	1.000	1	sff	1.00	\$	1.00			1.00			
D3070	Special HVAC Systems & Equipment	1.000	1	sff	0.00	\$	-			0.00			
D3080	Systems Testing & Balancing	1.000	1	sff	0.00	\$	-	¢.	4.50	0.00	6	4.50	2.0
<b>D40</b> D4010	FIRE PROTECTION Fire Protection Sprinkler System	1.000	1	sff	1.50	\$	1.50	\$	1.50	1.50	\$	1.50	3.6
D4010 D4020	Stand-Pipe & Hose Systems	1.000	1	SIT	0.00	\$	1.50			0.00			
D4020	Fire Protection Systems	1.000	1	sff	0.00		-			0.00			
D4040	Special Fire Protection Systems	1.000	1	sff	0.00	\$	-			0.00			
D50	ELECTRICAL				2.30	Ĺ		\$	12.75	1.30	\$	12.75	30.6
D5010	Electrical Service & Distribution	1.000	1	sff	4.25	\$	4.25			4.25			
D5020	Lighting & Branch Wiring	1.000	1	sff	5.50	\$	5.50			5.50			
	0	1.000	1	sff	2.00	\$	2.00			2.00			
D5030 D5040	Communication & Security Systems Special Electrical Systems	1.000	1	sff	1.00		1.00			1.00			

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Moderate

	Drainet					Date		11/19/2009				
	Project: Location Owner	Backfill Pro Denver, Col Metropolita	•									
	Program:	RNL Design					Мос	derate			1	
		Ratio	Elei	mental	Cost	Element	Amo	ount	Rate per	GSF		
Code	Element	to GSF	Quantity		Unit Rate	Sub-Total		Total	Sub-Total		Total	%
E10	EQUIPMENT						\$	2.00		\$	2.00	4.8
E1010	Commercial Equipment	1.000	1	sff	0.00	\$ -			0.00			
E1020	Institutional Equipment	1.000	1	sff	2.00	\$ 2.00			2.00			
E1030	Vehicular Equipment	1.000	1	sff	0.00	\$ -			0.00			
E1040	Laboratory Equipment	1.000	1	sff	0.00	\$ -			0.00			
E20	FURNISHINGS						\$	2.00		\$	2.00	4.8
E2010	Fixed Furnishings	1.000	1	sff	2.00	\$ 2.00			2.00			
E2020	Movable Furnishings	1.000	11	sff	0.00	\$ -			0.00			
F10	SPECIAL CONSTRUCTION						\$	-		\$	-	0.0
F1010	Special Structures	1.000	1	sff	0.00	-			0.00			
F1020	Integrated Construction	1.000	1	sff	0.00	\$ -			0.00			
F1030	Special Construction Systems	1.000	1	sff	0.00	\$ -			0.00			
F1040	Special Facilities	1.000	1	sff	0.00	\$ -			0.00			
F1050	Special Controls & Instrumentation	1.000	1	sff	0.00	\$ -			0.00			
F20	SELECTIVE BUILDING DEMOLITION						\$	7.50		\$	7.50	18.0
F2010	Building Elements Demolition	1.000	1	sff	3.50	3.50			3.50			
F2020	Hazardous Components Abatement	1.000	1	sff	4.00	\$ 4.00			4.00			
	NET BUILDING COST						\$	41.70		\$	41.70	100.
G5020	Other Site Systems & Equipment					\$ -			0.00			
	NET CONSTRUCTION COST						\$	41.70		\$	41.70	100.0

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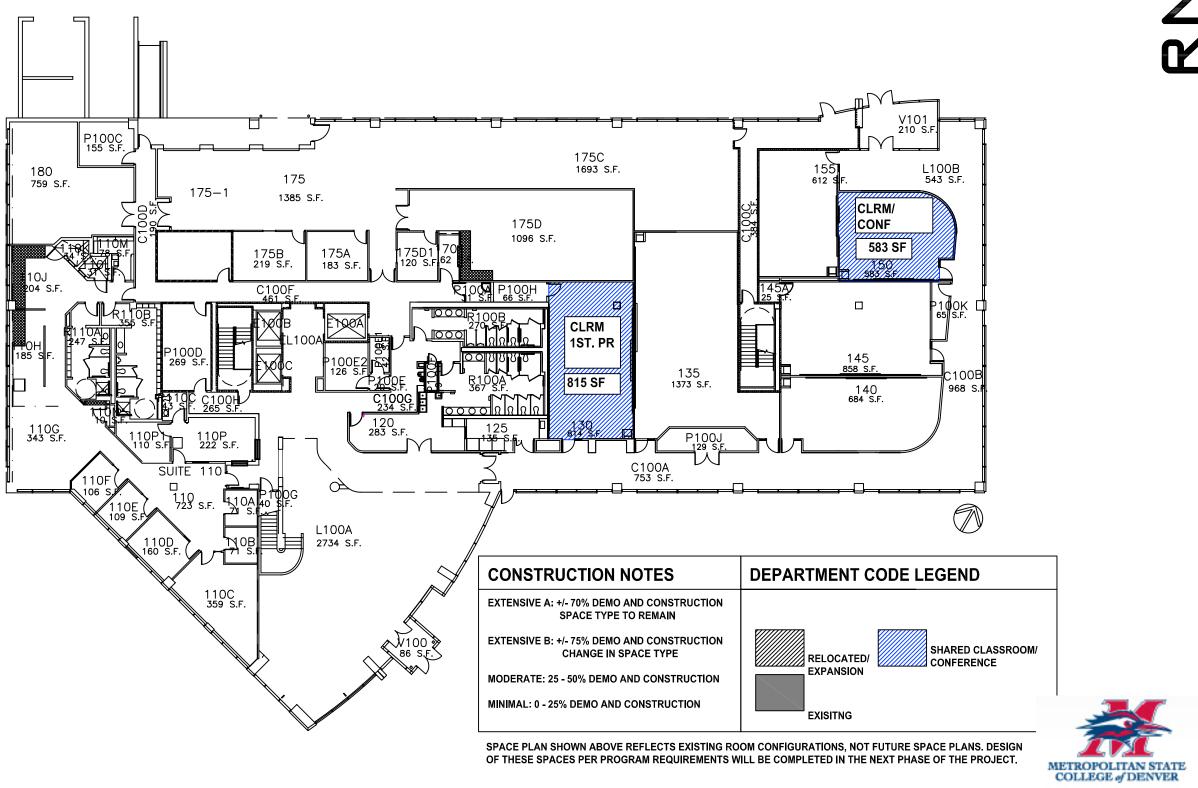
	Project:	Backfill Pro	-							Date	11/	/19/2009	
	Location Owner	Denver, Col Metropolita	lorado n College of D	enver									
	Program:	RNL Design							imal	ı		1	
		Ratio		mental		Element	Amo		Rate per				
Code	Element	to GSF	Quantity		Unit Rate		Sub-Total		Total	Sub-Total		otal	%
A10	FOUNDATIONS							\$	-		\$	-	0.0
A1010	Standard Foundations	1.000	1	sffp	0.00	\$	-			0.00			
A1020	Special Foundations	1.000	1	sffp	0.00	\$	-			0.00			
A1030 <b>A20</b>	Slab on Grade  BASEMENT CONSTRUCTION	1.000	1	sffp	0.00	\$	-	\$		0.00	\$	_	0.0
A2010	Basement Excavation	1.000	1	sffp	0.00	\$		Ф	-	0.00	Ф	-	0.0
A2010 A2020	Basement Walls	1.000	1	sffp	0.00	\$	-			0.00			
B10	SUPERSTRUCTURE	1.000		SIIP	0.00	Ψ	-	\$		0.00	\$	-	0.0
B1010	Floor Construction	1.000	1	sff	0.00	\$	_	Ψ		0.00	Ψ		0.0
B1020	Roof Construction	1.000	1	sffp	0.00	\$	_			0.00			
B20	EXTERIOR CLOSURE	1.000		onp	0.00	ų.		\$	-	0.00	\$	-	0.0
B2010	Exterior Walls	1.000	1	sf	0.00	\$		Ė		0.00			
-	Mechanical Screen	1.000	1	sf	0.00	\$	-						
B2020	Exterior Windows	1.000	1	sf	0.00	\$	-			0.00			
B2030	Exterior Doors AL/GL and HM	1.000	1	sf	0.00	\$	-			0.00			
B30	ROOFING							\$	-		\$	-	0.0
B3010	Roof Coverings	1.000	1	sf	0.00	\$	-			0.00			
B3020	Roof Openings	1.000	1	sf	0.00	\$	-			0.00			
C10	INTERIOR CONSTRUCTION							\$	2.50		\$	2.50	22.5
C1010	Partitions 5/8" GWB each side with insulation	1.000	1	sff	1.00	\$	1.00			1.00			
	Partitions to structure	1.000	1	sff	0.00	\$	-						
C1020	Interior Doors single and pair	1.000	1	sff	1.00	\$	1.00			1.00			
C1030	Specialties	1.000	1	sff	0.50	\$	0.50			0.50			
C20	STAIRCASES							\$	-		\$	-	0.0
C2010	Stair Construction	1.000	1	sff	0.00	\$	-			0.00			
C2020	Stair Finishes	1.000	1	sff	0.00	\$	-			0.00			
C30	INTERIOR FINISHES							\$	7.85		\$	7.85	70.7
C3010	Wall Finishes New paint	1.000	1	sff	3.50		3.50			3.50			
C3020	Floor Finishes Carpet	1.000	1	sff	3.30	\$	3.30			3.30			
C3030	Ceiling Finishes Paint only	1.000	1	sff	1.05	\$	1.05	•		1.05	•		0.0
D10	CONVEYING SYSTEMS	0.000	0	-4	0.00	•		\$	-	0.00	\$	-	0.0
D1010	Elevators 2 stops hydraulic	2.000	2	stop	0.00		-			0.00			
D1020 D1030	Escalators & Moving Walks	1.000 1.000	1	sff sff	0.00	\$	-			0.00			
D1030	Material Handling Systems PLUMBING	1.000	<u> </u>	511	0.00	φ	-	\$		0.00	\$		0.0
D2010	Plumbing Fixtures	1.000	1	sff	0.00	\$		Ψ		0.00	Ψ	-	0.0
D2020	Domestic Water Distribution	1.000	1	sff	0.00	\$	_			0.00			
D2030	Sanitary Waste	1.000	1	sff	0.00	\$	_			0.00			
D2030	Rain Water Drainage	1.000	1	sff	0.00	\$	-			0.00			
D2050	Special Plumbing Systems	1.000	1	sff	0.00	\$	-			0.00			
D30	HVAC				2.30			\$		1.30	\$	-	0.0
D3010	Energy Supply	1.000	1	sff	0.00	\$	-			0.00			
D3020	Heat Generating Systems	1.000	1	sff	0.00		-			0.00			
D3030	Cooling Generating Systems	1.000	1	sff	0.00	\$	-			0.00			
D3040	Distribution Systems	1.000	1	sff	0.00		-			0.00			
D3050	Terminal & Package Units	1.000	1	sff	0.00	\$	-			0.00			
D3060	Controls & Instrumentation	1.000	1	sff	0.00		-			0.00			
D3070	Special HVAC Systems & Equipment	1.000	1	sff	0.00	\$	-			0.00			
D3080	Systems Testing & Balancing	1.000	1	sff	0.00	\$	-			0.00			
D40	FIRE PROTECTION							\$	-		\$	-	0.0
D4010	Fire Protection Sprinkler System	1.000	1	sff	0.85		-			0.00			
D4020	Stand-Pipe & Hose Systems	1.000	1	sff	0.00	\$	-			0.00			
D4030	Fire Protection Systems	1.000	1	sff	0.00		-			0.00			
D4040	Special Fire Protection Systems	1.000	1	sff	0.00	\$	-			0.00			
D50	ELECTRICAL							\$	-		\$	-	0.0
D5010	Electrical Service & Distribution	1.000	1	sff	0.00		-			0.00			
05020	Lighting & Branch Wiring	1.000	1	sff	0.00		-			0.00			
D5030	Communication & Security Systems	1.000 1.000	1	sff sff	0.00		-			0.00 0.00			

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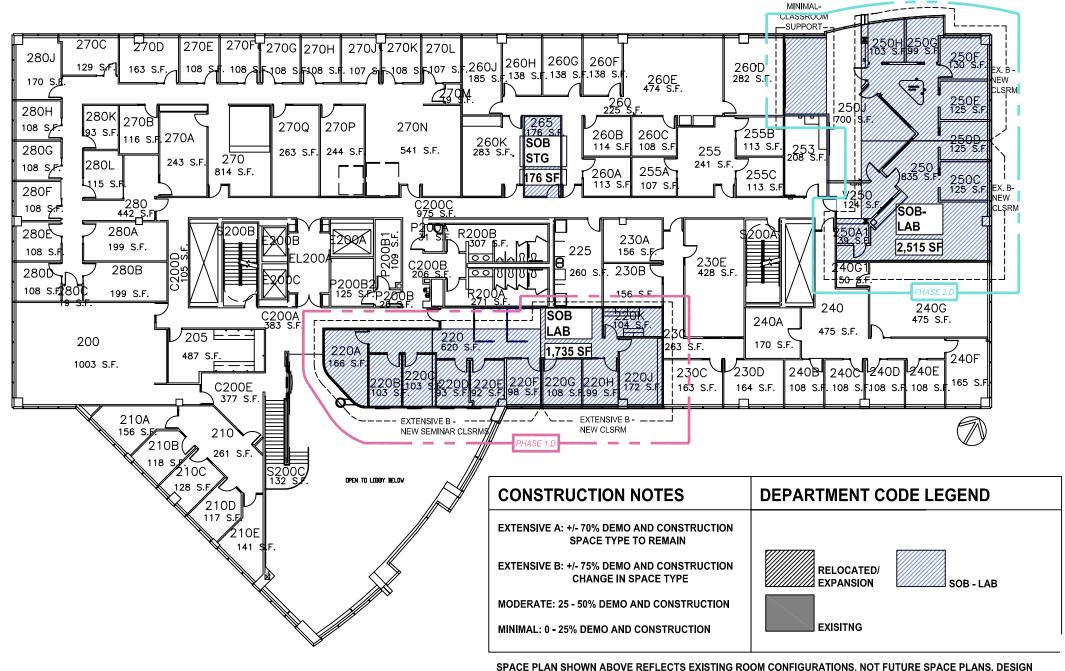
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		Backfill Pro	gram Plan						Date		11/19/2009	
	Project:	Backfill Pro	•									
	Location Owner	Denver, Col Metropolita	orado n College of D	enver								
	Program:	RNL Design	_				Min	imal			1	
		Ratio	Eler	mental	Cost	Element	Am	ount	Rate per	GSF	=	
Code	Element	to GSF	Quantity		Unit Rate	Sub-Total		Total	Sub-Total		Total	%
E10	EQUIPMENT						\$	-		\$	-	0.0
E1010	Commercial Equipment	1.000	1	sff	0.00	\$ -			0.00			
E1020	Institutional Equipment	1.000	1	sff	0.00	\$ -			0.00			
E1030	Vehicular Equipment	1.000	1	sff	0.00	\$ -			0.00			
E1040	Laboratory Equipment	1.000	1	sff	0.00	\$ -			0.00			
E20	FURNISHINGS						\$	-		\$	-	0.0
E2010	Fixed Furnishings	1.000	1	sff	0.00	\$ -			0.00			
E2020	Movable Furnishings	1.000	1	sff	0.00	\$ -			0.00			
F10	SPECIAL CONSTRUCTION						\$	-		\$	-	0.0
F1010	Special Structures	1.000	1	sff	0.00	\$ -			0.00			
F1020	Integrated Construction	1.000	1	sff	0.00	\$ -			0.00			
F1030	Special Construction Systems	1.000	1	sff	0.00	\$ -			0.00			
F1040	Special Facilities	1.000	1	sff	0.00	\$ -			0.00			
F1050	Special Controls & Instrumentation	1.000	1	sff	0.00	\$ -			0.00			
F20	SELECTIVE BUILDING DEMOLITION						\$	0.75		\$	0.75	6.8
F2010	Building Elements Demolition Dust Control	1.000	1	sff	0.75	0.75			0.75			
F2020	Hazardous Components Abatement	1.000	1	sff	1.00	\$ -			0.00			
	NET BUILDING COST						\$	11.10		\$	11.10	100.0
G5020	Other Site Systems & Equipment					\$ -			0.00			
	NET CONSTRUCTION COST						\$	11.10		\$	11.10	100.0
	GROSS FLOOR AREA:		sf <b>TOT</b> .									100.

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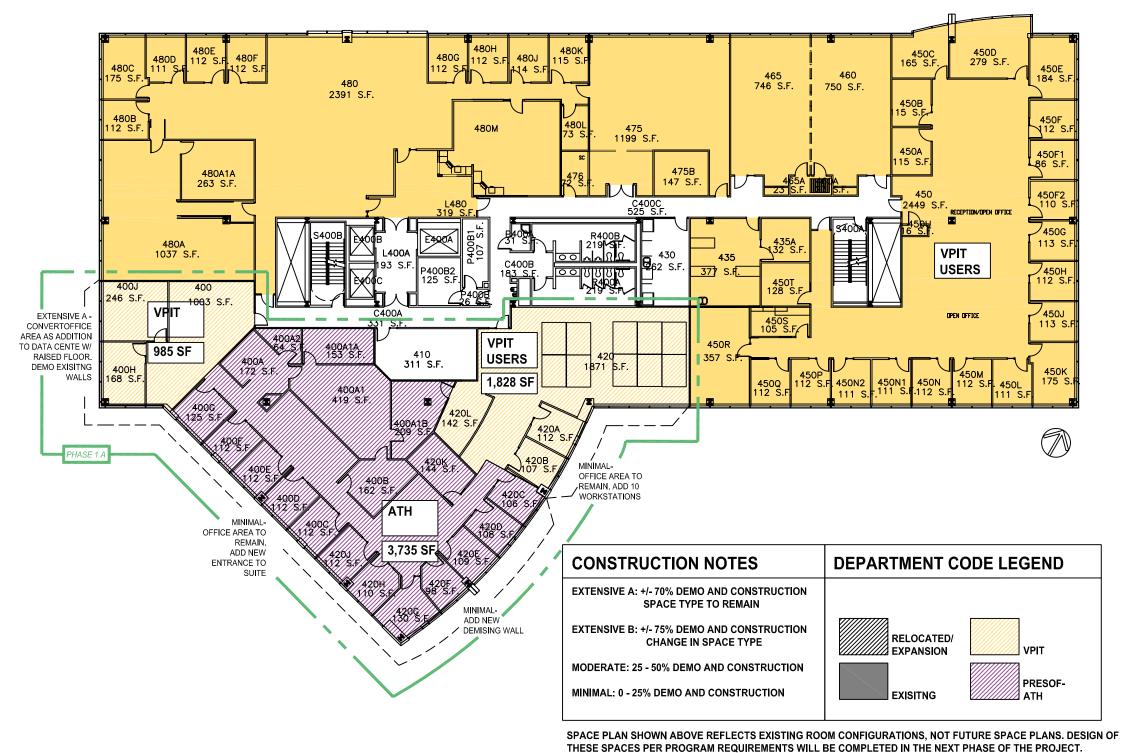
ADMINISTRATION BUILDING FLOOR 1



SPACE PLAN SHOWN ABOVE REFLECTS EXISTING ROOM CONFIGURATIONS, NOT FUTURE SPACE PLANS. DESIGN OF THESE SPACES PER PROGRAM REQUIREMENTS WILL BE COMPLETED IN THE NEXT PHASE OF THE PROJECT.



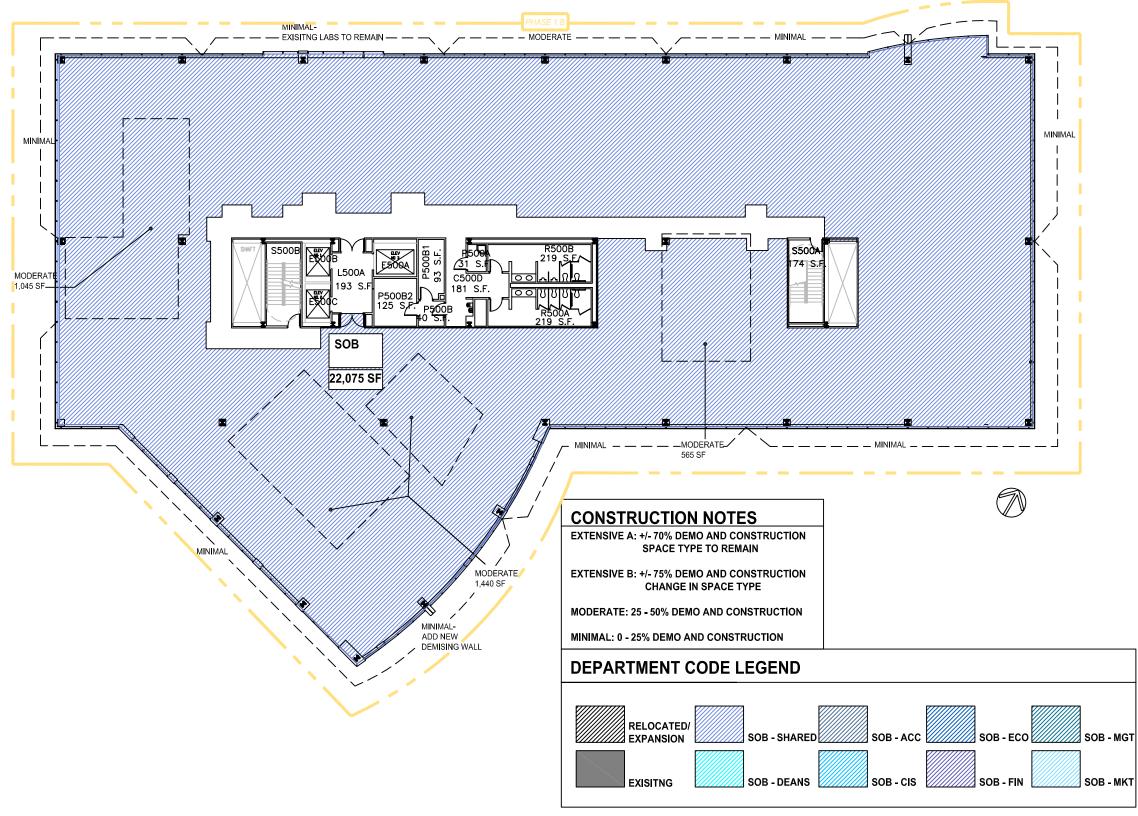
ADMINISTRATION BUILDING FLOOR 2





THESE SPACES PER PROGRAM REQUIREMENTS WILL

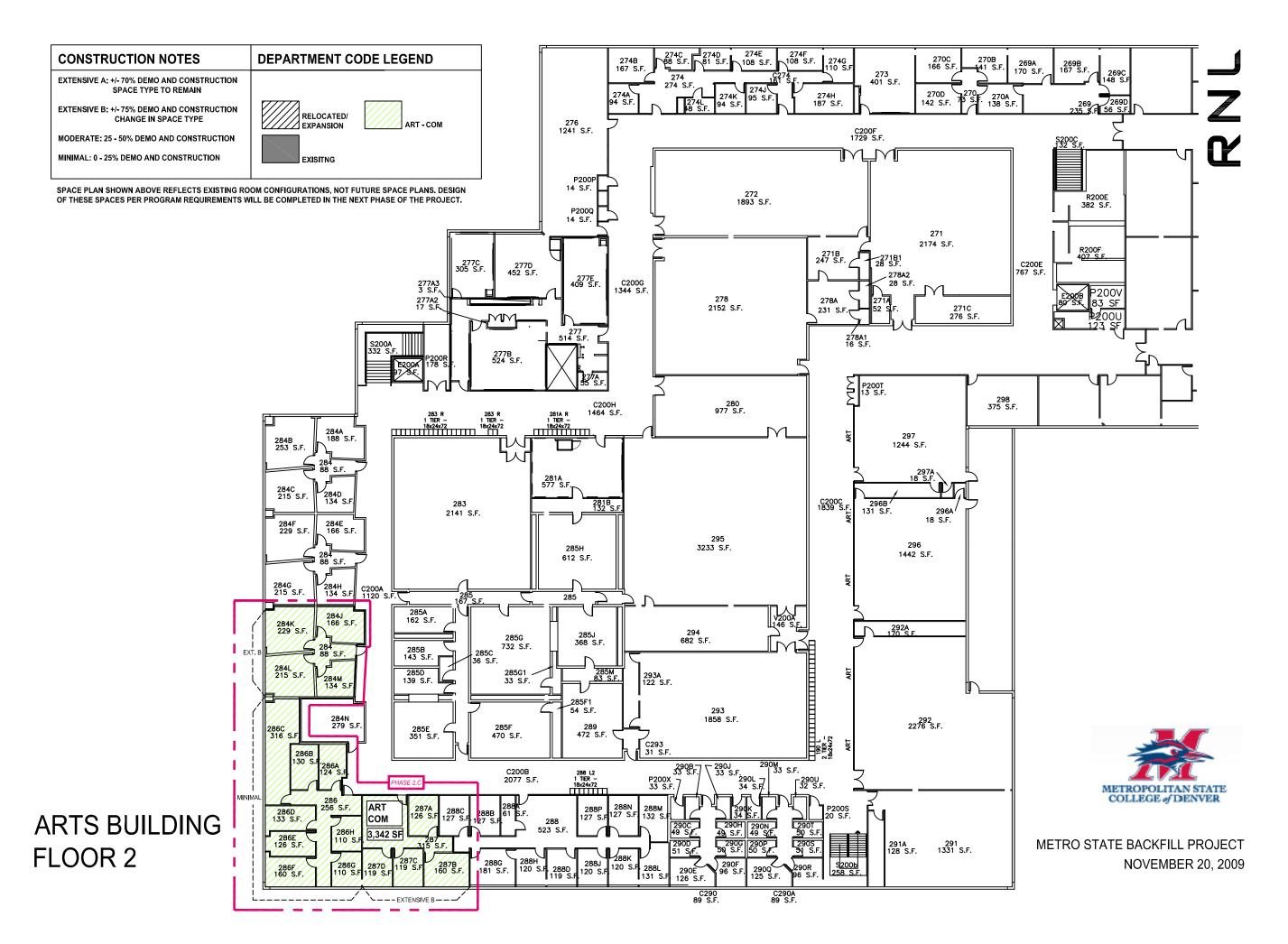
ADMINISTRATION BUILDING FLOOR 4

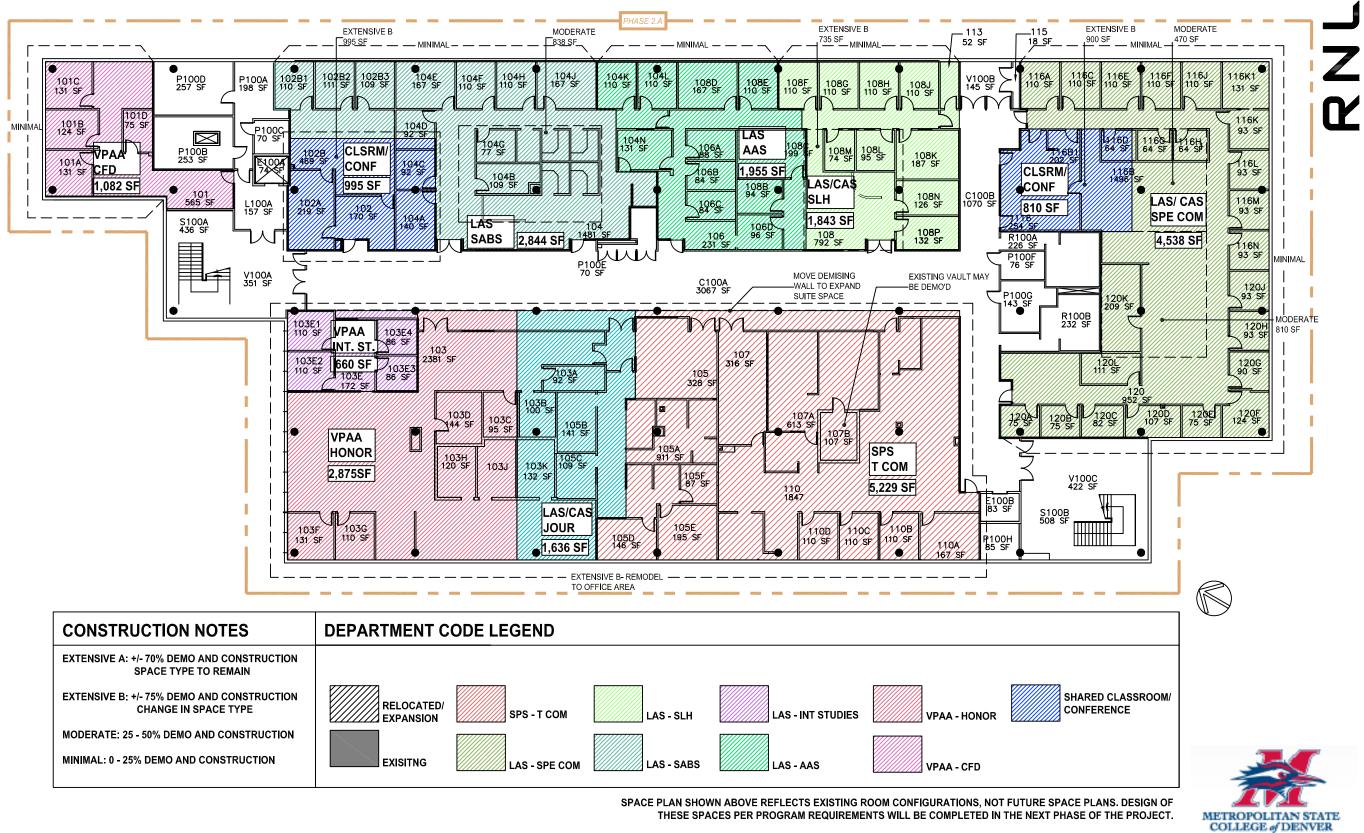




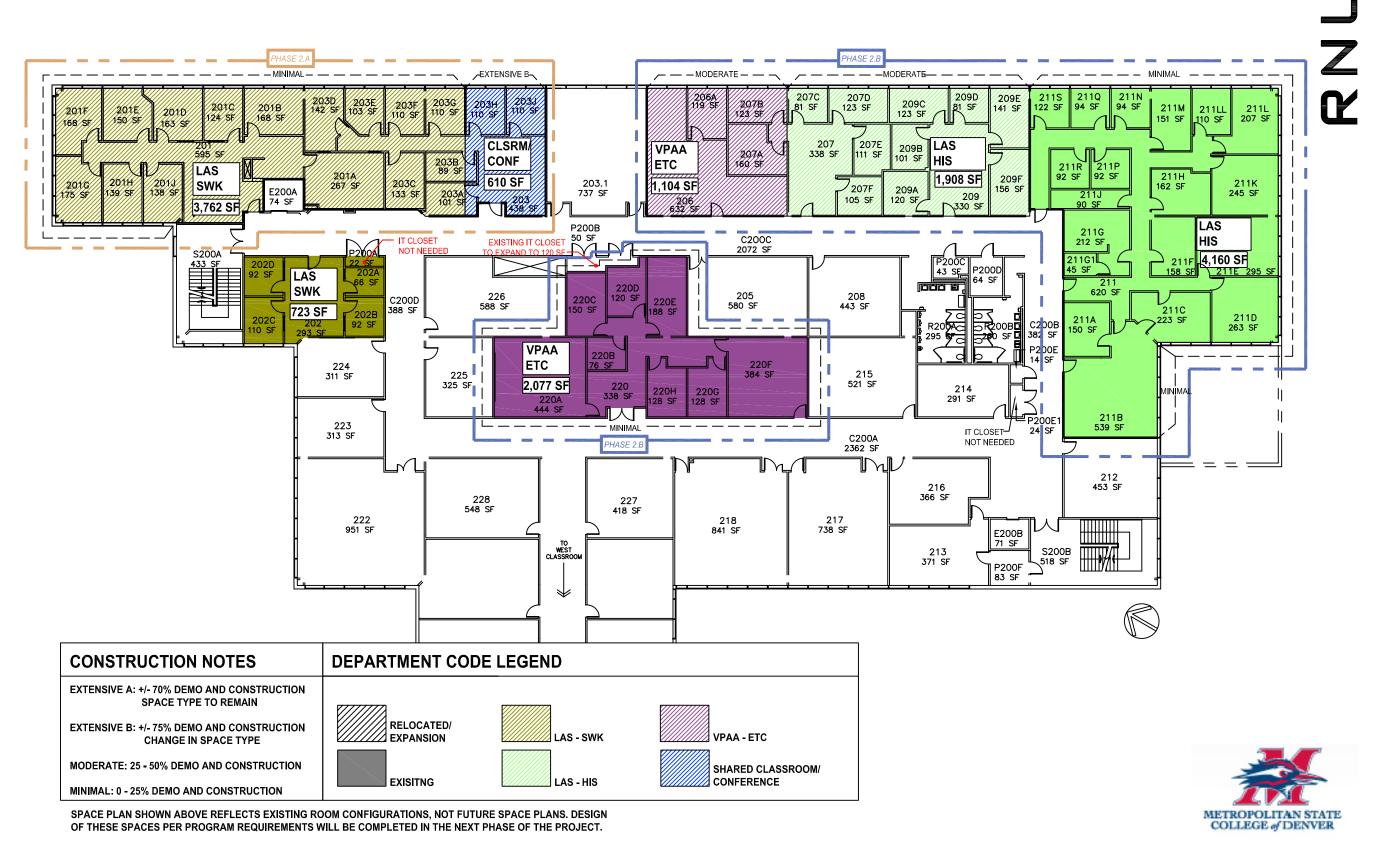
ADMINISTRATION BUILDING FLOOR 5

SPACE PLAN SHOWN ABOVE REFLECTS EXISTING ROOM CONFIGURATIONS, NOT FUTURE SPACE PLANS. DESIGN OF THESE SPACES PER PROGRAM REQUIREMENTS WILL BE COMPLETED IN THE NEXT PHASE OF THE PROJECT.

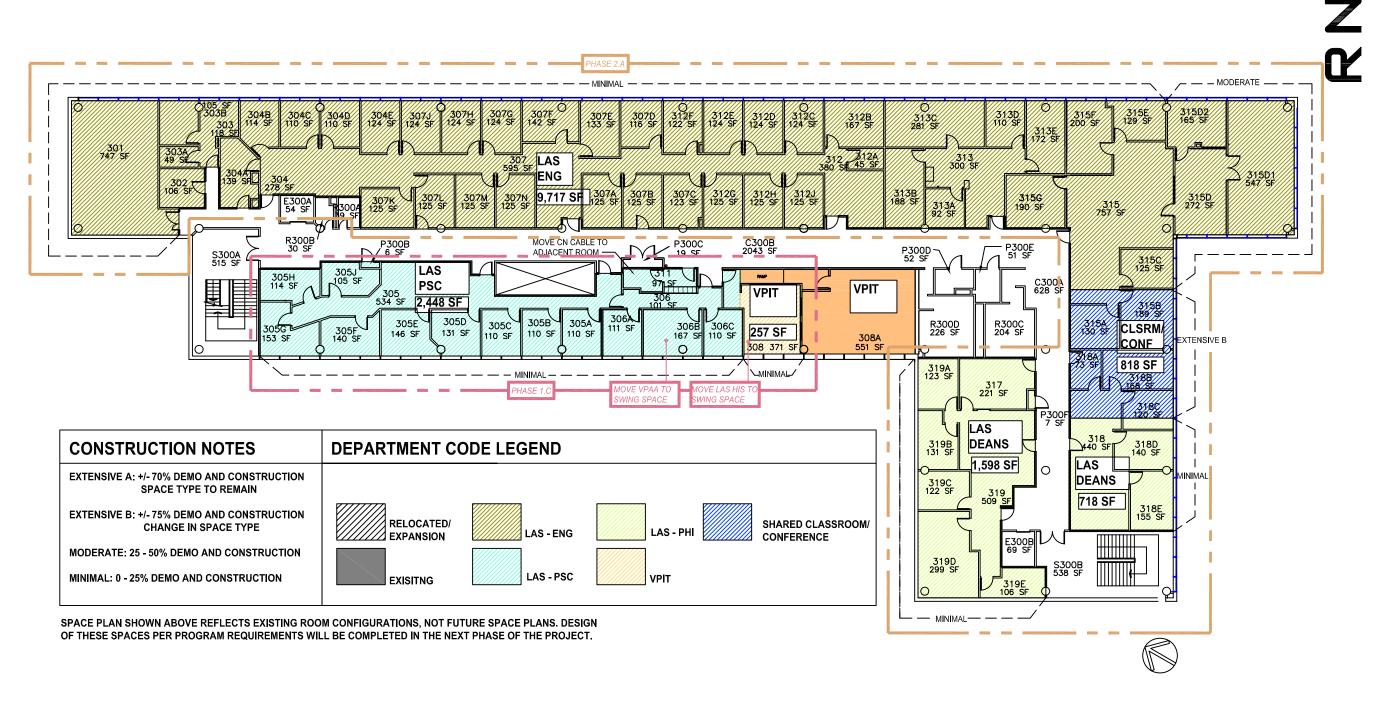




**CENTRAL CLASSROOM BUILDING** FLOOR 1

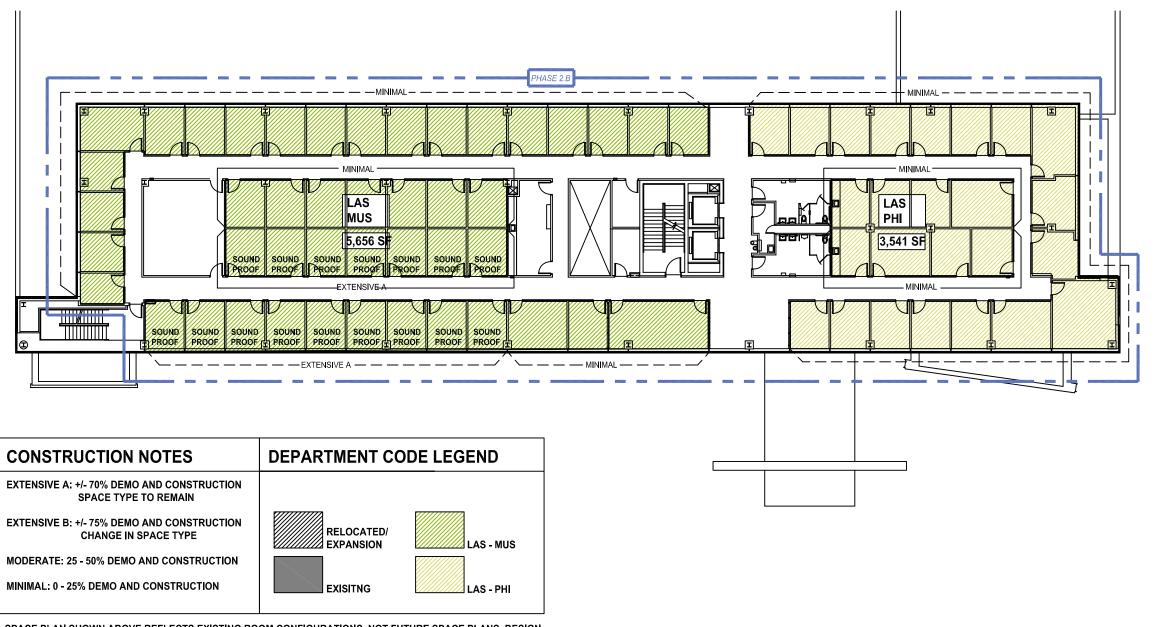


CENTRAL CLASSROOM BUILDING FLOOR 2





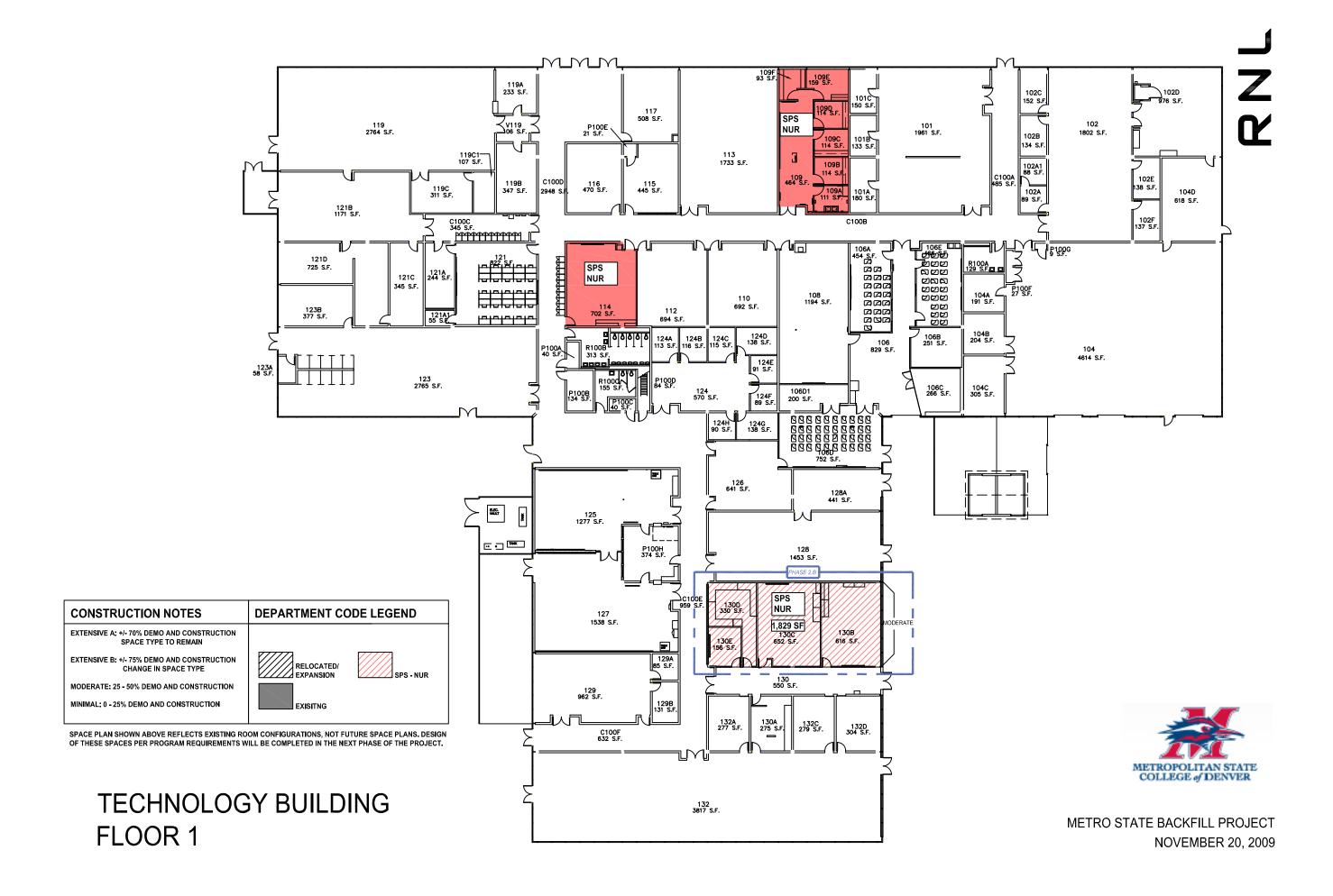
CENTRAL CLASSROOM BUILDING FLOOR 3



SPACE PLAN SHOWN ABOVE REFLECTS EXISTING ROOM CONFIGURATIONS, NOT FUTURE SPACE PLANS. DESIGN OF THESE SPACES PER PROGRAM REQUIREMENTS WILL BE COMPLETED IN THE NEXT PHASE OF THE PROJECT.



KING CENTER FLOOR 4





SPS - DEANS

SPACE PLAN SHOWN ABOVE REFLECTS EXISTING ROOM CONFIGURATIONS, NOT FUTURE SPACE PLANS. DESIGN OF THESE SPACES PER PROGRAM REQUIREMENTS WILL BE COMPLETED IN THE NEXT PHASE OF THE PROJECT.

EXISITNG

SPS - ADMIN



MINIMAL: 0 - 25% DEMO AND CONSTRUCTION





WEST CLASSROOM BUILDING FLOOR 2

THESE SPACES PER PROGRAM REQUIREMENTS WILL BE COMPLETED IN THE NEXT PHASE OF THE PROJECT.