



HEALTH PROGRAMS

integration renovation: annex building | littleton campus

gkkworks | January, 2018



VISION:

to be the leader in
community college education
in the state of
Colorado.

MISSION:

to provide innovative & responsive
educational & economic opportunities
in an accessible, inclusive environment
that promotes success for
students, employees
& community.

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OVERVIEW

i. OVERVIEW

A. EXECUTIVE SUMMARY

Arapahoe Community College (ACC) is requesting approval of the Health Programs Integration Renovation Program Plan for the renovation of the Annex Building on the Littleton campus. This Program Plan is the second of four goals outlined in the approved 2017 Facilities Master Plan for ACC focusing on:

- Updating current space deficiencies and increasing space needs for the health programs based on rising enrollment and the changing pedagogies in academic spaces for health professions;
- Increasing facility access to accommodate under-served populations in the college's community;
- Providing needed code and infrastructure upgrades in the aging facility.

Space Needs Analysis

Academic Spaces

Academic spaces in the Annex are over 40 years old and were designed based on teaching philosophies of the 1970's. The space currently serves several programs on the Littleton campus, including five primary health programs including: Emergency Medical Services (EMS), Nursing (NUR), Nurses Aid (NUA), Medical Assistant Program, and Physical Therapist Assistant (PTA). Academic spaces in many of the health classrooms are 50% undersized for lab exercises and active learning. Active and simulated learning are educational models that bridge the gap between classroom learning and real-life clinical experience. Simulated learning has been proven to be a far more effective method to teach critical thinking skills and a consistent predictor of student success, particularly in health-related fields.

Current health spaces are designed around a silo teaching approach for each health program, and due to the existing space restrictions, there are few opportunities for interdisciplinary collaboration between the various programs. Research shows that patient care outcomes increase when healthcare professions are integrated. Translating these findings to the academic environment at ACC will provide successful educational pedagogies for integrated healthcare education across all programs in simulated learning spaces. This Program Plan intends to provide active learning environments, informal learning spaces, and traditional flexible classrooms.

Program Growth

The 2017 student enrollment was 3,760 in the five primary health programs listed above. Enrollment is projected to grow 10-15% over the next five years due to a number of contributing factors across all programs.



Image 1.0: Southwest Facade - Main & Annex Building

ACC VISION STATEMENT
*To be the leader in
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in the state of Colorado*

MISSION STATEMENT
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The EMS program specifically, has seen significant growth of 15-20% in part due to the relocation of the entire HealthOne program and the creation of the EMS Academy to the Littleton Campus. Additionally ACC will offer a four-year Bachelor of Applied Science (BAS) degree in Emergency Service Administration beginning in the Fall of 2018.

Clinical opportunities for the various health programs is currently a limiting factor for student enrollment at ACC. Quality simulated learning experiences can replace the clinical experience required by Colorado State Board of Nursing accreditations by 50%. Replacing clinical experiences in simulated classroom education will allow approximately a 10% growth in the ACC's Registered Nurse's Program. This growth will be supported by job opportunities and anticipated growth of this profession of 40% in Colorado. Simulated learning environments will allow ACC to remain current in providing compliant recertification programs for ACC graduates and other professionals.

The renovated and reconfigured spaces at ACC will allow for growth of the CNA and nurses programs; Douglas County and Highland's Ranch concurrent enrollment; and consideration of emerging health career programs and needs.

Access: Health and Safety

Inclusion is integral to ACC's Mission, Values and Strategic Plan. A major deficiency in the Annex is a lack of vertical transportation within the structure not making the building readily accessible for students. Proposed renovations will allow ACC to better serve the South Metro, Arapahoe, Douglas, and Jefferson County communities by redesign of the space to attract, serve, and accommodate the diversity of students that are not only entering the community college from high school, but who are returning students retraining for a second career or late career start.

Beneficiaries of this Program Plan include:

- Current and new health program students including:
 - Bachelor of Applied Science (BAS) in Emergency Service Administration
 - Emergency Medical Services (EMS)
 - Physical Therapy Assistant (PTA)
 - Medical Assisting Professional (MAP)
 - Nursing (NUR)
 - Nurses Aid (NUA)
 - Emerging health care programs.
- Workforce students who need to remain current with licenses.
- Community partners integral to ACC's programs for trained Healthcare professionals.
- Under-served populations, due to enhanced access.

ACC's Strategic Vision 2020 Plan guides the campus from 2015 through 2020. As part of the Strategic Vision 2020 Plan, ACC reviewed its current learning environment and outlined a process to address the changing needs of the 21st century learner with five strategic directions.

STUDENT SUCCESS

Provide students with seamless opportunities to achieve educational, professional, and personal goals, from inquiry to completion, through meaningful academic and career pathways.

TECHNOLOGY LEADERSHIP

Lead through innovative and collaborative use of technology-enhanced teaching and learning with integrated, dynamic, and accessible systems across all College environments.

INCLUSIVE CULTURE

Welcome and engage individual differences, committing to collaboration and transparency in communication and decision-making.

COLLABORATIVE PARTNERS

Forge and enhance mutually beneficial partnerships that promote the vitality and relevance of our curriculum and programs.

ORGANIZATIONAL SUSTAINABILITY

Operate responsively to the needs of our students, staff and community through responsive management of human, physical, and fiscal resources.

State Prioritization Criteria

In summary, the project meets State of Colorado prioritization criteria outlined in the 2018 Colorado Commission on Higher Education (CCHE) Capital Budget Instructions as follows:

- **Health and Life Safety:** Annex was constructed in 1977 and was documented with FCI of 82.27 (Major Maintenance Needed) in a professional audit completed in 2016. Lack of ADA access throughout the facility, with the major deficiencies being non-compliant showers and restrooms and no vertical transportation significantly hinders the college's ability to attract and serve its student population.
- **Other Funded Sources:** The college has internally funded and is committed to funding portions of the upgrades outlined in the Facility Audit to bring the building up to code and maintain the facility. Funding for the Health Programs Integration Renovation will be through a combination of sources including: Capital Construction, Cash and Arapahoe Community College Foundation Funding. Cash and Foundation Funding will supplement the Capital Construction request.
- **Space Need Analysis:** Health academic spaces are undersized and need to be increased by 50%. The current space inhibits interdisciplinary work between health programs. Current enrollment projections anticipated to increase by 10-15%.
- **Beneficiaries:** Health program students, workforce learners, concurrent enrollment programs, community partners and employers.
- **State Goals:** This program plan meets all four CCHE Master Plan Strategic Goals:
 - *Goal 1: Increase credential completions*
Increase the age 25-34 population credential attainment
 - *Goal 2: Erase equity gaps*
 - *Goal 3: Improve student success*
Reduce average time-to-degree
 - *Goal 4: Invest in affordability and innovation*
Increase innovation: innovate new education-delivery methods and business models.
- **Board Priority:** This Health Integration Program Plan is based on Arapahoe Community College's goal number two as determined in the 2017 approved Facilities Master Plan.

If this project is not funded, ACC's health programs will function in inadequate space for interdisciplinary work between health programs and ACC will continue to teach in a facility with code deficiencies and significant ADA issues.

B. PROJECT BACKGROUND

1. ACC FACILITY MASTER PLAN

In the Spring of 2017, Arapahoe Community College (ACC) received approval from the Colorado Commission on Higher Education (CCHE) for its Facility Master Plan for the college's three campuses in Littleton, Parker, and Castle Rock. The outcome provides a plan to guide the college for five years of facility planning to support the college's academic mission. The report utilizes the guidelines established by the Colorado Commission on Higher Education (CCHE) and Colorado Department of Higher Education (CDHE) for Facility Master Plans and academic research by Colorado Education. It includes information from the previous Master Plan prepared in November 2010 and concurrent planning and facility audits taken on by the college.

gkkworks facilitated a process to gather information from a cross section of stakeholders including instructional staff, student advisors, facilities staff, and members of the President's Cabinet. The plan outlines four goals to be undertaken for five years starting in 2017. The first goal is the Castle Rock Collaboration Campus that is currently in design with plans to open Fall of 2019. The second goal focuses on the renovation of the Annex Building on the Littleton Campus for ACC's signature health programs. This program plan is the first step in implementing this goal. There will be no redundancy between the Castle Rock campus and this Program Plan. Castle Rock students will have access to and will utilize the simulated learning environments proposed in this plan.

Underpinning the master planning and this Program Plan is an analysis of anticipated growth, utilization of the existing academic spaces, and addressing the changing needs of academic space for various teaching and learning styles and to engage students, staff, and external stakeholders.

2. PLANNING PROCESS | STAKEHOLDER CONSULTATION

The Health Programs Integration Renovation was developed over a five-month period beginning in August 2017. The planning process consisted of three phases:

Phase 1	Analysis and Goal Setting
Phase 2	Concept Alternatives
Phase 3	Implementation Strategy and Program Plan Documentation

The design team structured the process with the same inclusive and collaborative approach ACC utilized in developing the Strategic Vision 2020 Plan. Members of the health programs' deans and faculty, Fitness Center representatives and business and computer program faculty participated in workshops, interviews, face-to-face interactions, and tours of the campus. Development of the plan was reviewed by the President's Cabinet throughout the process. The facility manager provided tours and insight into the condition of the facilities. Dr. Cindy Somers, Vice President of Administrative Services, served as an invaluable resource in leading the process and providing feedback throughout the development of this document.

Phase 1- Analysis and Goal Setting: Meetings with the stakeholder groups identified key goals, concerns, and the guiding principles for the Program Plan. The design team toured existing health spaces in the Annex to understand functional differences. In addition, the team toured similar health program facilities in the community to create a shared base line for development for ACC's program spaces.

Phase 2 - Concept Alternatives: a number of alternative plans and images were reviewed and. This iterative process evaluated concept plans against the, Master Plan and Program Plan guiding principles. Alternatives were aligned with anticipated future growth, academic space utilization, 21st century education spaces, and the physical constraints and attributes of the existing facility. Feedback from stakeholders was gathered and integrated into a final preferred plan.

In the final phase - **Implementation Strategy** and Program Plan Documentation, the document was developed and reviewed through several drafts.

2. PLANNING PROCESS | STAKEHOLDER CONSULTATION

The Program Plan began with an engaging process with faculty, program directors, and campus leadership to include a series of workshops. Meeting notes are included in the appendix, however a summary of meetings is as follows:

- **Workshop #1: August 17, 2017:**

The goal of this meeting was to kick-off the process for the Program Plan for Health Programs Integration Renovation in the Annex at the Littleton Campus. Key outcomes of the meeting were to gain feedback from the faculty and staff and start a discussion on the guiding principles for the Program Plan and discuss the current functionality of spaces supporting the programs.

- **Facility Tours (2): Red Rocks Arvada Campus
Aurora Community College Campus**

The design team and representatives from ACC toured two community college campuses with similar health program spaces. The team used these spaces as a precedent to discuss with the health program group. There is no redundancy in space types on these campuses and those proposed in the Program Plan.

- **Workshop #2: September 5, 2017:**

The goal of the meeting was to gather information from the health programs' deans, directors, and faculty. The design team facilitated a conversation about integrated program space, while narrowing down the program's guiding principles. The design team divided the group into four teams and each team included representatives from various health programs. Each team was provided a blank floor plan of the Annex building followed by a kit of parts for each team to express their opinions on classroom locations, specific health program needs, and proximity of academic spaces with one another. Each team presented their design, and an open forum was facilitated for attendees to express their thoughts on the direction for the next floor plan concept.



Image 1.1: Paramedic simulation space at Community College of Aurora



Image 1.2: Simulation space at Red Rocks Community College



Image 1.3: Workshop #2 exercise with health program faculty

- ***Workshop #3: September 21, 2017:***

The goal of the meeting was to have groups from the health programs including deans, directors, and faculty review alternative plan schemes and provide feedback on the various schemes. The design team provided three schemes developed from the feedback received in Workshop #2.

- ***Meeting with Cabinet: September 25, 2017:***

The goal of the meeting was to gather information from ACC's President's Cabinet. The design team presented the information gathered from the college's instructional group and the guiding principles derived from each session. The members of the Cabinet provided their feedback on integrated program space, narrowed down the guiding principles, and recommended a local hospital to tour for the inspiration of simulated learning environments to potentially replicate in the Program Plan.

- ***Existing Building walk-through with structural engineer, cost estimator, and ACC facility director: October 16, 2017:***

Goal of the walk-through was to understand the facility director's input on structural systems and interface with the existing building.

- ***Tour of University of Colorado Anschutz Bar Lab: November 2, 2017:***

Goal of the tour was to observe innovative use of technology in delivering health curriculum.

- ***Existing building walk-through with mechanical and electrical engineers and ACC facility director: November 3, 2017:***

Goal of the walk-through was to understand the facility director's input on MEP systems and interface with the existing building.

- ***Workshop#4 : November 6, 2017:***

This was the final meeting held with health program faculty, deans, and directors. The design team reviewed the guiding principles, the floor plan concept, and room data sheets for the Program Plan and provided an open forum for any and all comments on the Program Plan progress.

- ***Visioning Business and Computer Classrooms: November 7, 2017:***

The goal of the meeting was to determine classroom and technology needs for the Business and Computer Networking programs and provide an update on the Program Plan for potential new locations on the second floor of the Annex.

- ***Meeting with Cabinet: December 11, 2017:***

Initial draft review.

- ***Meeting with Cabinet: January 15, 2018:***

Final draft review.

- ***Weekly update meetings with ACC project manager:***

The design team facilitated weekly discussions with ACC representatives to stay up to date on design progress and program plan development.

C. PROGRAM PLAN VISION, GOALS, AND OBJECTIVES

GOALS AND OBJECTIVES

The following goals summarize the Master Plan. Goal #1: Castle Rock Collaboration Campus, as of January 2018, is in the design phase. This Program Plan outlines the process related to goal #2 for the health programs. There is no redundancy between the Castle Rock campus or the Health Programs Integration Renovation Program Plan.

ACC MASTER PLAN FACILITY GOALS

1. Castle Rock Collaboration Campus
2. Health Programs Integration Renovation: Annex Building, Littleton Campus
3. Learning Commons Renovation: Main Building, Littleton Campus
4. Maintenance of Existing Facilities

HEALTH PROGRAMS INTEGRATION RENOVATION PROGRAM PLAN GUIDING PRINCIPLES

Through the process of the Program Plan, the guiding principles were developed and refined in conjunction with the college. These principles were instrumental in guiding the Program Plan process and will be a critical component in the implementation of the design of the renovation.

- *Create a facility and instructional spaces for health profession students and workforce to prepare them for careers in current and future healthcare environments.*
- *Create dynamic and flexible educational spaces for shared utilization between like and diverse health programs.*
- *Create an overall environment that supports diversity and inclusivity for all learners and educators.*
- *Enhance connections between health programs and other campus spaces including the Fitness Center to promote health, wellness, and fitness.*
- *Provide outdoor and indoor gathering space for students, faculty, and staff to encourage integration of health programs and informal learning.*



JUSTIFICATION

ii. JUSTIFICATION

A. EXISTING CONDITIONS

1. CURRENT FACILITIES: ANNEX BUILDING

FCI: 82.27% (Mid-range of Major Maintenance Needed)

FACILITY OVERVIEW BUILDING

The Annex Building was built in 1977 as an addition south of Main Building on the Littleton Campus. An addition to the Annex was added to the east of this building. There is a load bearing wall and variation in finished floor levels between the original building and the addition that limits some of the flexibility in remodeling the Annex. The 81,385 gross square foot building is a two-story structure containing classrooms, health programs, nursing labs, Fitness Center, the Colorado Gallery of Arts, Community Education offices, automotive technology department and suite of deans' offices. A Facility Audit of the Annex building was completed October 10, 2016 by Stephen Hall Architects. Overall, the Annex is in good condition as the college continues to annually invest in the facility through the annual maintenance fund. However, there are major deficiencies in the building beyond the scope and budget of annual maintenance.

CODE DEFICIENCIES AND LIFE SAFETY ISSUES

- There is no fire sprinkler system in the building (with the exception of the Automotive classrooms). Fire protection needs to be added to all portions of the Annex included in this program plan.
- ADA Access is severely limited throughout the Annex. There are no elevators in the Annex. The only accessible route to the second floor is through the Main Building or from a single door on the west facade from the exterior. The Facility Audit notes that the facility was constructed prior to the enactment of ADA. In addition to being a significant code deficiency, the lack of accessibility is mis-aligned with ACC's strategic plan commitment for inclusivity and embracing individual differences.
- Restrooms and Shower rooms are not ADA accessible and require a full remodel. The shower walls are required to be removed and replaced in their entirety due to water intrusion.

SUMMARY OF DEFICIENCIES

- Roof top units 7,9 & 10 which service the automotive classrooms and the current art gallery areas need to be replaced.
- Ventilation at the restrooms and locker rooms needs to be improved.
- Storefront windows on the south side of the Fitness Center need to be replaced.
- The electrical system is beyond its useful life and requires replacement.
- Exterior concrete walls are spalling and require repair.
- Exterior windows need to be re-caulked.
- Lighting in the fitness areas requires replacement.
- Exterior windows are single pane and are not energy efficient.



Image 2.0: West Facade - Annex Building



Image 2.1: Recently replaced Annex Building roof



Image 2.3: Simulation Classroom



Image 2.4: Fitness Center

ACADEMIC PROGRAM SPACE OVERVIEW

The Annex is not well connected to the Main Building or outdoors. There is little access to natural light. Once inside the Annex, orientation for students and visitors is challenging with no hierarchy of spaces and inconsistent wayfinding. Access between the first and second floor is inconvenient as there is no elevator making the building not in compliance with basic ADA standards and not in alignment with the value ACC places on best practices in ADA.

HEALTH PROGRAM TEACHING SPACES

While ACC considers its health programs to be a signature offerings, there is a lack of identity for the programs and no central student gathering and study space in the Annex Building, causing students to study in hallways and corners. Program space for EMS, Nursing, MAP and PTA are currently located on both the first and second floors and educators are currently delivering content in traditional classrooms and lab spaces without the necessary space requirements the curriculum needs. Large equipment including: beds, exam tables, a simulated ambulance, and various full size mannequins are required across all health programs. Classrooms are approximately 50% too small to accommodate this equipment, or to support an active and collaborative teaching style.

The EMS Program recently customized space on the first floor of the Annex in order to adapt to recent increases in enrollment. EMS added several skills rooms for individual testing however, the spaces are undersized and not easily monitored by an instructor. EMS' classroom contains a simulated ambulance that is working well however, only allows for limited active and collaborative learning experiences. Currently, EMS supplements their simulated experiences in the parking lot at the southern end of the campus with an existing ambulance slated to be retired no later than Fall 2018.

HEALTH FACULTY

Health faculty are currently located on the south end of the Annex Building on the second floor and are not in close proximity to classrooms or student spaces.

FITNESS CENTER

The Fitness Center has been through a number of remodels including replacement of the roof top air unit and converting the pool into a multi-purpose gym. New LED lighting is currently being installed as part of the annual maintenance budget. Fire sprinklers and acoustic ceiling will be required as part of the Health Programs Integration Renovation. Restrooms and showers associated with the Fitness Center do not meet ADA standards and severe water damage requires full replacement of the showers and demising walls.

INFORMAL LEARNING AREAS | OUTDOOR SPACES

The Annex has no informal gathering or study space. This is a significant detriment to the health programs that seek to develop cohorts of students for learning outside the classroom.



Image 2.5: Physical therapy classroom



Image 2.6: Nursing Lab



Image 2.7: Nursing Lab



Image 2.8: Simulation Ambulance

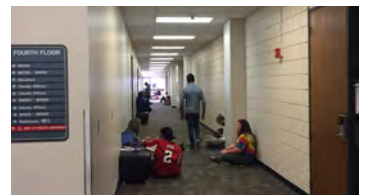
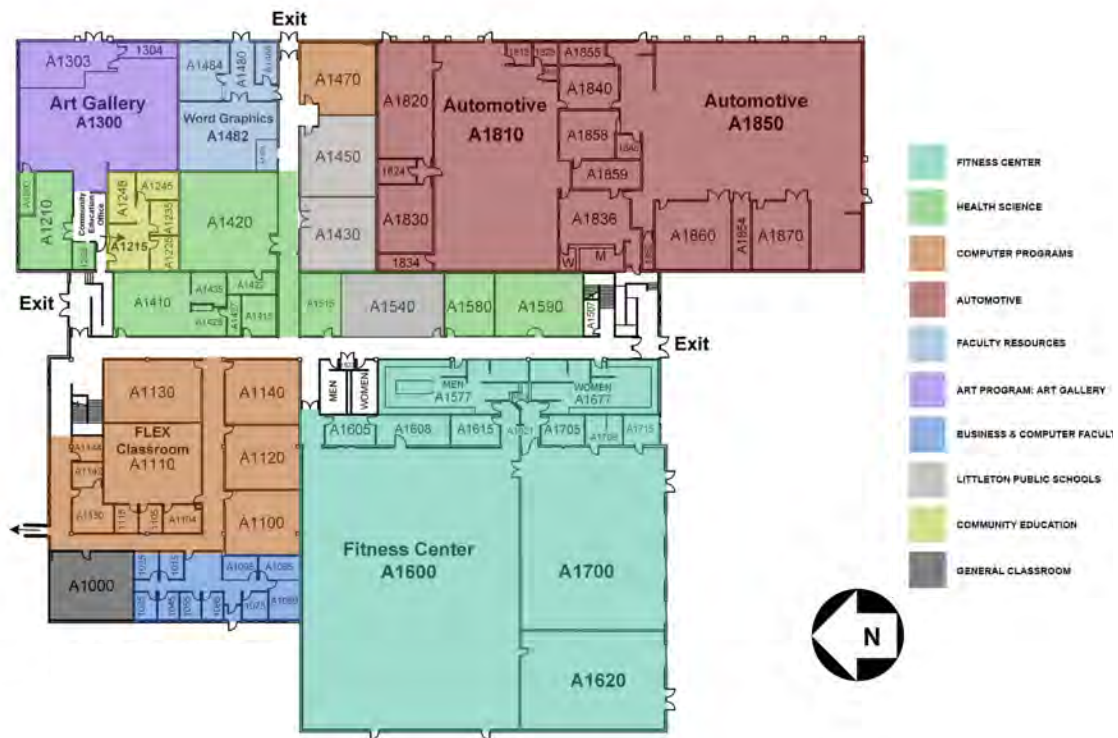


Image 2.9: Students gather in hallways in-between classes



Image 2.10: Fitness Center



ANNEX BUILDING 1ST FLOOR
 Figure 2.11: Existing Programs Diagram



ANNEX BUILDING 2ND FLOOR
 Figure 2.12: Existing Programs Diagram

CLASSROOMS AND TEACHING SPACES

Classrooms for general courses are currently small and irregularly shaped. The proportion of the room and furniture layout is for traditional lecture style delivery and not well suited for flexible delivery of instruction. Health programs are currently using traditional classrooms and nursing and physical therapy labs. The use of these spaces is awkward and undersized for the required large equipment and active learning spaces for students.

FACULTY OFFICES

Faculty are currently located in offices not in proximity to the classrooms they support. Business faculty located in the Annex currently teach in the Church Avenue Building, a site located two blocks from the Annex. Discussions with health faculty and innovative technology health faculty indicate immediate proximity to classrooms and labs is essential to student success.

ADMINISTRATIVE OFFICES AND SUPPORT SERVICE

The administrative offices are currently located on the west side second floor of the Annex. Layout of the offices is inefficient due to the geometry of the partitions. It was determined through the master planning process that this suite of offices could be relocated into the Main Building.

ART GALLERY AND GALLERY SUPPORT SPACES

The Art Gallery and support spaces are located on the first floor on the east side of the building. The gallery attracts both students and general public however, its remote location with a primary access through the loading dock is a deterrent for visitors. The gallery is lacking adequate exhibition lighting and wall panels. As part of the Facilities Master Plan, the Art Gallery and supporting space will be relocated to the Main Building.

COMMUNITY EDUCATION

A suite of Community Education offices are located on the first floor. These spaces have no direct connection to classrooms and education spaces and could be relocated.

WORD GRAPHICS

The central printing, shipping, and receiving area for all three ACC campuses is located on the first floor on the east side of the building. The space currently has exterior access for deliveries and loading. These spaces can be relocated as part of the Health Programs Integration Renovation as long as loading dock access is maintained.

AUTOMOTIVE

The automotive classrooms and spaces are located on the eastern part of the first floor and will not be impacted by this Program Plan.

SUPPORT SPACES

Current closets for IT, electrical panels, equipment, servers and infrastructure for water entry are distributed throughout the building. Relocation of this infrastructure will be cost prohibitive.

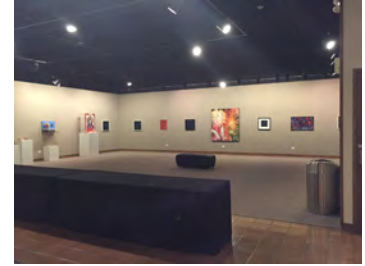


Image 2.13: Art Gallery



Image 2.14: Word Graphics Space



Image 2.15: General Classroom

2. CURRENT PROGRAM OFFERINGS AND ENROLLMENT

HEALTH ENROLLMENT

PROGRAM	AY15		AY16		AY17		2 YEAR % Change AY15-17	
	ENROLLMENT	FTE	ENROLLMENT	FTE	ENROLLMENT	FTE	ENROLLMENT	FTE
Emergency Medical Services	1,502	117.18	1,817	139.74	1,772	133.11	18.0%	13.6%
Medical Assisting Professional	486	50.07	340	35.64	248	26.47	-49.0%	-47.1%
Nursing Assistant	535	36.23	599	40.07	713	47.87	33.3%	32.1%
Nursing	609	113.27	636	108.44	673	104.82	10.5%	-7.5%
Physical Therapist Assistant	371	35.23	400	39.43	354	36.47	-4.6%	3.5%

This chart summarizes enrollment in ACC's key health programs on the Littleton campus. Enrollment has been growing due to a number of factors.

The 2-year growth in the EMS program can be attributed to changing the program into an academy and building more relationships with employers. The full impact of integration of the HealthOne EMT and paramedicine programs into the ACC EMS Academy as of spring 2018 has yet to be realized. Workforce training to maintain professional credentials is continuing to increase.

The Nurse's Aid (NUA) program has seen significant growth over the last 2 years.

The Nursing program has seen an increase in the number of students served even though the FTE generated has decreased due to mandated curriculum changes resulting in less overall credits for the degree. The decline in the MOT program is due to a change in emphasis from MOT to MAP.

EMERGENCY MEDICAL SERVICES (EMS)

The EMT program has been in place at ACC for over 30 years. Previously, the ACC EMS department had a strong, long-standing relationship with the Swedish Medical Center/ Health ONE Paramedic Program. In January 2017, the HealthOne Paramedic and Paramedic Refresher Program was moved to ACC to create a new Emergency Medical Services Academy.

All classes are approved by the State of Colorado Department of Public Health and Environment. In addition to lectures, the program utilizes on-campus simulated learning with a classroom ambulance, mock vehicles, and the outside grounds of the building to prepare students for real medical emergencies and on-the-job scenarios. Courses include joint training with nursing students.

The Paramedicine Program has four components: lecture, lab, clinical and field internships. This program totaling approximately 1,200 hours. Student must complete all coursework, lecture, lab, clinical and field internship, as well as pass all academic and practical components before sitting for the National Registry Examination. The program has achieved an unprecedented 100% pass rate on the National Registry Exam, the qualifying examination for Paramedic certification.

The EMS Department offers three certificate programs including:

- Emergency Medical Services (EMT) certificate: This is a 10-credit hour certificate program that provides the basic skills to work ambulance, apply for firefighting positions, work as an EMT in emergency departments and work ski patrols.
- EMT basic enhanced certificate: This is 27-hour EMT enhanced certificate which provides additional training to improve the EMT's employability, prepare the student for paramedic school and other healthcare careers.
- Emergency Medical Services Paramedic Certificate: This is a 45-credit certificate recently associated with HealthONE EMS in Englewood, CO and this certificate is accredited by the Commission on Accreditation of Allied Health Education Programs. This program is offered two times per year, starting in January and June. Students have the option of attending full-time or part-time.

MEDICAL ASSISTING PROFESSIONAL (MAP) (formerly MOT)

The MAP program is comprised of 3 certificates:

- Administrative Assistant Certificate
- Billing and Reimbursement Certificate
- Medical Assistant Certificate

The Administrative Assistant certificate enables students to work the front office/reception area of physician's office. The Medical Assistant certificate enables students to get a job as a fully fledged MA for the front and back office of a physician's office. In addition to doing reception work in the office, an MA also does patient care including laboratory work and injections. The Billing & Reimbursement certificate enables students to become a billing specialist in an ambulatory care setting.

As a certified Medical Assisting Professional, employment is available in hospitals, medical clinics, physician offices, laboratories, public health facilities, nursing homes as well as in veterinary, industrial and environmental laboratories in Colorado and nationwide. The US Bureau of Labor Statistics state that employment for Medical Assistants (MAs) is expected to grow faster than the average for all occupations through the year 2022. The Colorado projected percent change in medical assistant employment between 2012 and 2022 is expected to be +27%. The



Image 2.16: EMS Students



Image 2.17: EMS Students

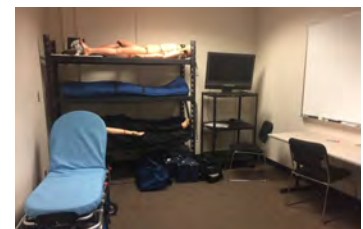


Image 2.18: EMS Skills breakout space

NURSE AID (NUA)

Nurse Aide at ACC is a 6-credit one-semester program (4 credit Nurse Aide Theory and Practical Lab course and 2 clinical courses) and results in a certificate. The Colorado State Board of Nursing approves the NUA Program. After completing the Nurse Aide Certificate program, a student is prepared for entry-level employment as a Certified Nurse Aide (CNA), following certification by the Colorado Board of Nursing. The program includes clinical experience in a variety of settings. A graduate from the NUA program is eligible to be employed in acute care, long-term care and hospice care facilities.

NURSING (NUR)

ACC's Nursing program is approved by the Accreditation Commission for Education in Nursing, Inc. (ACEN), the Colorado State Board of Nursing and the Colorado Community College System. Students develop skills to work in hospitals and clinical settings in the areas of Obstetric and Pediatric, Medical/Surgical, and Psychiatric Nursing. ACC has a top rated program with recognized high NCLEX exam pass rates (95%-100%) compared to the national average of 81%-90%. Over the past 5 years 90%-100% of graduates are employed in their field. ACC works closely with an Advisory Committee that provides feedback on nursing/health care industry graduate standards, requirements and desired new graduate outcomes.

ACC partners with four Universities in Denver to provide opportunities for students to receive their BSN degree: Metro State University College of Nursing, University of Colorado-Colorado Springs, and University of Phoenix.

PHYSICAL THERAPIST ASSISTANT (PTA)

A Physical Therapist Assistant is a health care provider working under the direction of a physical therapist that is involved in the treatment of individuals with a variety of diagnoses whose ages can range from infants to the elderly. A physical therapy assistant is able to provide physical therapy services as specified in a care plan developed by a physical therapist. They are involved in modification of treatment programs, patient/family education and discharge planning.

The PTA program at ACC is accredited by the Commission on Accreditation of Physical Therapy Education (CAPTE) of the American Physical Therapy Association. The PTA program has a 20 year history with the Physical Therapy community. The program has outstanding National Exam results, (93%-100% over the past five years) and 100% of ACC's graduates are employed as PTAs within six months of passing licensure exam. A graduate from the PTA program is eligible for employment in acute care, skilled care, inpatient and outpatient rehabilitation facilities, and home health care services.

B. TRENDS IN COMMUNITY COLLEGE EDUCATIONAL ENVIRONMENTS

1. STUDENT ENGAGEMENT

The Community College Survey of Student Engagement (CCSSE) report on student engagement summarizes outcomes of 20 years of research that the more students are engaged the more they are likely to learn, stick to their studies and attain their academic goals. Student engagement in this study is defined as involvement, integration and quality of effort in social and academic experiences.

Successful engagement includes interaction with faculty and staff, other students, and subject matter.

Student-faculty interaction measures the extent that students and faculty communicate about academic performance, career plans, and course content and assignments. These interaction can be formal in the classroom setting, semi-formal in a faculty office space or informal with central and shared student-teacher lounge and outdoor spaces. Spaces outside of the classroom, informal study areas and project rooms for individual or group study are increasingly important to provide opportunities for students to engage with one another.

2. TEACHING PEDAGOGIES & LEARNING ENVIRONMENTS

Educational research confirms that shifting away from lecture style classrooms will improve student success.

the notion of what constitutes a “classroom” is changing. But whether face to face, online, or a combination of the two, most college experiences are structured around a traditional lecture format. This remains true despite research and student feedback affirming the value of “hands on” or applied learning. A combination of the problem – and project-based learning, out of class group projects, internships, clinical placements, fieldwork, and other discipline-appropriate activities enables educators to structure learning so that students can apply and practice newly acquired skills and knowledge.”

A Matter of Degrees, 2014, p. 34-36

Key design features of applied learning in the classroom is reflected through these three goals of development in response to the demands of today’s workforce. This present-day learning structure requires students to be more engaged in their field of study through applied learning.

One of the key finding from CCSSE is that “active and collaborative learning was perhaps the most consistent predictor of student success across studies and across measures, suggesting that the impact of active and collaborative learning is pervasive in the college experience. The underlying requirement in the college environment is flexibility. In educational spaces, this means that instructors can easily change the configuration of the room to best serve the subject, class or equipment being used. Classrooms can change form a lecture layout to team based or skill learning space.

Healthcare programs are beginning to see the benefit of simulation labs for health profession training. Office layouts and location are shifting to encourage interaction and collaboration between students and faculty, and a multitude of flexible spaces for group or one on one collaboration.”

CLINICAL SIMULATION IN HEALTHCARE EDUCATION

Simulation-based education is considered a vital component of experiential education, and the benefits of clinical simulation in healthcare education are increasingly reported in the literature. Clinical simulations bridge the gap between theory and practice by immersing students in realistic, dynamic and complex settings. Students develop higher order cognitive skills and gain the opportunity to solve complex multidimensional problems without placing actual patients or students at risk. Collaboration and communication are improved in simulated learning environments among interdisciplinary teams in a realistic, safe environment (Ivanitskaya et. al, 2002). It also engages students and faculty in innovative ways to study and practice clinical reasoning skills. In addition, simulation learning provides a more comprehensive healthcare education by providing training opportunities in clinical settings that are otherwise limited to students due to liability concerns. Rare conditions in a real clinical setting can be programmed into simulated scenarios providing experiences students might not otherwise receive.

Three recent reports on deaths due to preventable medical errors and hospital infections in U.S. hospitals have estimated the figure to be greater than 200,000 deaths per year (Kavanagh, et. al., 2017; Cha, 2016; James, 2013). Studies conducted by the Institute of Medicine have identified communication as a fundamental cause of errors in the healthcare profession (O’Daniel M. & Rosenstein A., 2008). Improved collaboration and communication between healthcare disciplines is essential to reduce health system errors and ensure positive patient outcomes. Realizing that healthcare is a complex system that requires multifaceted communication and conscious collaboration efforts, the Institute of Medicine has cited interdisciplinary learning in health care education as a core educational requirement (Institute of Medicine, 2003). Simulation-based education, encouraging critical thinking and decision making with team members from different disciplines, is one teaching strategy that supports interdisciplinary learning. Interdisciplinary education is an educational approach in which two or more disciplines collaborate with the learning process with the goal of fostering interprofessional interactions that enhance the practice of each discipline, provide opportunities for understanding the role of other professionals in healthcare delivery and promote safe patient care (King et al., 2013). The use of interdisciplinary simulation-based training in healthcare education has increased dramatically over the past few years. Reports on the educational outcomes have shown that this teaching methodology has increased practitioner competence, helped students connect didactic learning to real-life situations, enhanced deeper thinking through reflection, and provided opportunities for students from varied disciplines to work together and learn from each other (Chown, G., 2015; Bridges, D., 2011)

The simulation health center at ACC will be set up with a variety of practice environments including hospital rooms, exam rooms, office spaces, and home care settings. The ACC simulation health center is intended to foster participation and engage ACC students from more than eight different health professions. This interprofessional experience will provide students with a foundational understanding of other healthcare professions, promote a team-based approach to healthcare delivery, and help develop students’ interprofessional competencies, which is an important component in the ongoing quest to increase patient safety.

BENEFIT OF SIMULATION IN HEALTHCARE EDUCATION

The Institute of Medicine (IOM) report *‘To Err is Human, Building a Safer Health System’* report identified medical errors as one of the leading causes of death in the United States. (IOM, 2000) The report identifies processes to decrease the medical error rate and states that healthcare training should incorporate “proven methods of teamwork training like simulation.” Simulation is one of the best ways for students to learn critical thinking skills, practice in realistic situations, and develop confidence. (McKenna, 2016)

When helping students acquire skills necessary for appropriate patient care, simulation has been identified as being superior to a traditional clinical experience. (McGaghie, 2011) With an increase in the number of students in healthcare programs and with the difficulty and cost of placing healthcare students in clinical settings, Arapahoe Community College (ACC) can look to well designed, outcome based simulation as a viable clinical option for most of its healthcare programs. Studies have shown that a significant amount of clinical time can be replaced with simulated experiences with no detriment to student learning. (Watson, 2012)

Interprofessional education is a benefit to students. When students graduate healthcare programs here at ACC they will work with providers in other areas of healthcare. Paramedics will work with EMTs and both will work with Nurses. Certified Nursing Aids and Physical Therapists will, at some point in their careers, interact with Nurses and EMS providers (EMT and Paramedics). The opportunity for ACC students to experience this interaction during their course work will make them more prepared for their work after graduation. Better teamwork and team dynamics benefit patients. Team training increases patient safety. (Salas, 2013) Simulation decreases provider errors. (Wyatt, 2004)

Multiple studies have shown well designed simulation enhances student experiences, facilitates critical thinking skills, increases patient safety and in many instances, is better than clinical experiences with actual patients for helping students learn procedures. As the standard for healthcare education moves towards a simulation based format, schools need to position themselves to be able to meet this need.

Curriculum and facilities need to be restructured to allow for “full integration” of simulation. (Gaba, 2007) A well designed simulation center here at ACC will provide an authentic, engaging environment for all healthcare disciplines to learn the application of their education while strengthening team collaboration. Healthcare programs at ACC are working to construct a multidisciplinary approach to healthcare utilizing all health programs within the college. The simulation center will be the corner stone for this process to mature. Students will benefit from simulation by enhancing the quality of healthcare, improving patient safety while incorporating a diversified learning strategy for care of the complex patient.

The healthcare programs at ACC have just begun to collaborate with curriculum development and have plans of including other disciplines in simulation events. The Simulation Center at ACC will be unparalleled in the State of Colorado and country, designed from the ground up as a multi-discipline simulation center.



Image 2.20: Precedent image for simulated reception



Image 2.21: Precedent image for simulated hospital room



Image 2.22: Precedent image for large simulation room



Image 2.23: Precedent image for labor/delivery/recovery room

Students enrolling in Nursing and EMS programs (EMT and Paramedic) will be well prepared at graduation and ready for entry into the workforce and articulation into the bachelor's programs offered at ACC. (Szypulski, H. & Obeidi, F., 2018)

3. IMPACT ON TECHNOLOGY TRENDS

Creative and flexible informal and formal learning environments continue to develop with access to technology and flexible building infrastructure. Today's learning environments need to support both fixed and mobile technology devices by providing a combination of movable devices with access to wifi and, to a lesser extent, fixed computers with data ports in both the classrooms and informal learning environments. Simulated learning environments like those at Red Rocks and Aurora Community Colleges will continue to develop as a valuable means of delivery of health programs with technology being a key component of these immersive experiences.

The advantages of introducing technology into simulated educational environments is the learning experiences can be customized. With technology such as video projections and sound, educators can change the environmental conditions more rapidly than with physical props, thus creating a range for environment from outdoor urban and public spaces to domestic environments. Computerized mannequins within the simulation environment can perform dozens of human functions realistically and mimic healthcare settings such as an operating room, critical care unit or labor and delivery suite.

Technological advances allow for immediate interaction between the student and educator in a simulated environment either through feedback or adapting the environment based on the student's proficiency and competency. Technology also allows for an educator to monitor the student remotely so as not to interfere with the simulation.

As teaching environments continue to develop, instructors need to have continued access to emerging technologies to deliver content to students and stay current.

INFORMAL LEARNING

Technology is of critical importance in supporting informal learning in health education. In some programs of healthcare, students function as cohort of students which are on campus all day throughout the week. Informal spaces for these students must be rich in technology that assists with classroom work and provides access to medical resources. These informal spaces can become simulated experiences of hospital lounges and lobbies that are trending to be rich in technology resources for medical information.

The Health Programs Integration Renovation in the Annex will need to be built to support current and emerging teaching pedagogies. Design will need to be flexible to support the anticipated learning environment and changing use and technologies over time may include emerging health development technologies in 3D and robotics.

"Improving Health Education? Technical solutions and digital learning tools offer various opportunities in health education. We believe that using the potential of digital learning tools and methods as supplement to other more traditional learning will improve health education in the long run. This is because these tools create variation, immediate feedback, enthusiasm, can easily be used to drill specific topics or procedures and they may even be fun."(Improvement of Health Education: The Opportunities of Technology and Digital Learning Tools,2014)

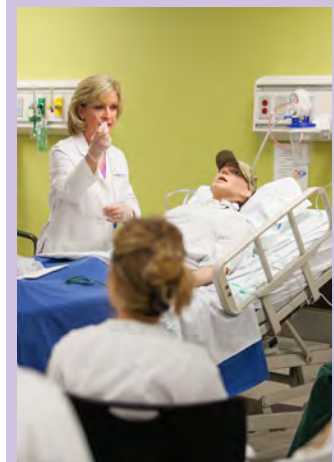


Image 2.19: Precedent image for a Nursing simulation classroom

4. EMPLOYMENT TRENDS

Health programs at ACC currently have more applicants than space to accommodate the students. Interest in the programs can in part be attributed to a high demand and projected growth in healthcare professions in Colorado. The majority of students graduating or receiving refresher training will be employed in Colorado.

OCCUPATION EMPLOYMENT AND GROWTH DATA ON ACC HEALTH PROGRAMS

OCCUPATION	AVERAGE ANNUAL OPENINGS	2015-2025 GROWTH RATE
Emergency Medical Technicians and Paramedics	236	39%
Medical and Clinical Laboratory Technicians	131	39%
Medical Assistants	548	37%
Medical Records and Health Information Technicians	128	34%
Nursing Assistants	1,118	34%
Phlebotomists	122	44%
Physical Therapist Assistants	85	51%
Registered Nurses	2,981	40%

Figure 2.24: Resource: Colorado Workforce Development Council Report

C. FUTURE PROJECTIONS

1. STUDENT POPULATION IN ACC SERVICE AREA

ACC's three campuses in Littleton, Parker, and Castle Rock serve Douglas, Arapahoe, and Jefferson counties. The top 4 counties for enrollment include Douglas, Arapahoe, Jefferson, and Denver counties. The zip codes with the highest enrollments include: 80126, 80134, 80129, 80127, and 80128 (Fall Census Databook).

ACC has enrollment from 48 high schools in the service area and additional relationships outside the region. ACC Student Recruitment Office has an ongoing relationship with these high schools. In addition, the college provides their local high schools with concurrent enrollment (CE) options.

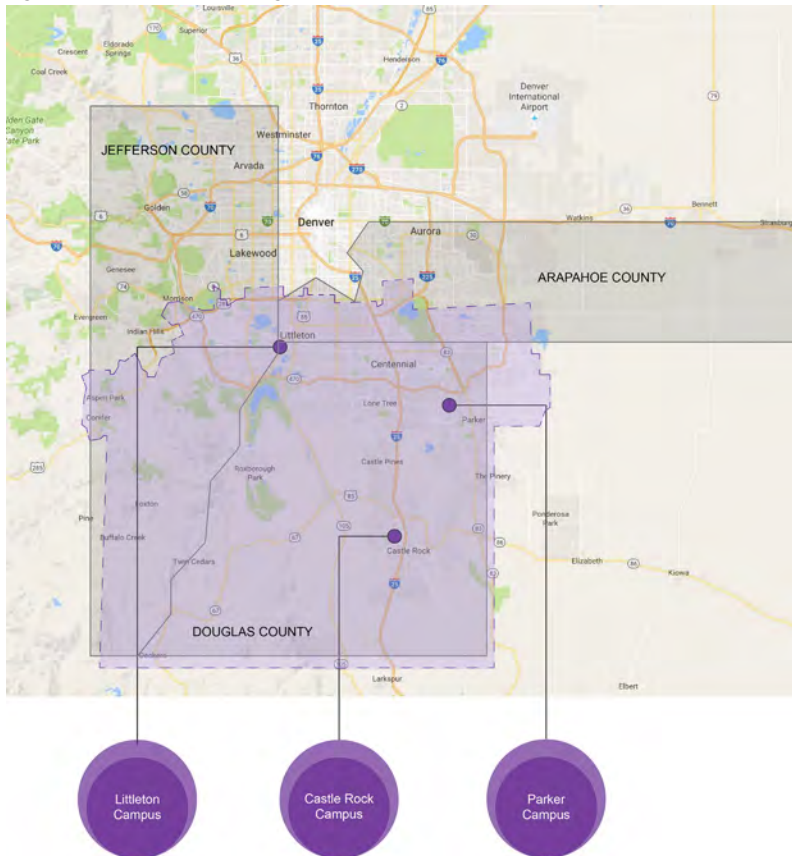
In 2016, 3,090 high school students were concurrently enrolled in one of the following four categories: ASCENT (5th year high school students taking courses at ACC campuses); enrollment at high school site; high school enrollment at ACC Littleton Campus; high school students taking college courses at ACC campuses (2016 Fall Census Databook).

The Castle Rock campus will have limited space dedicated to health care programs. As the needs increase across the service area, ACC will need the ability to grow at both campuses.

High Schools served by Arapahoe Community College:

Cherokee Trail High School
 Grandview High School
 Regis Jesuit High School
 Platte Canyon High School
 Castle View High School
 Daniel C. Oakes High School
 Douglas County High School
 Arapahoe High School
 Endeavor Academy (Cherry Creek PREP)
 Conifer High School
 Abraham Lincoln High School
 Colorado Academy
 Contemporary Learning Academy (CLA)
 D'Evelyn Jr-Sr High School
 Denver Academy
 John F Kennedy High School
 Mullen High School
 Sheridan High School
 South Denver High School
 Thomas Jefferson High School
 West High School
 SOAR Academy
 Jefferson High School
 Elizabeth High School
 Colorado's Finest Alternative High School
 Englewood High School
 Humanex Academy
 Cherry Creek High School
 Prairie View High School
 Eagle Academy
 Highlands Ranch High School
 Mountain Vista High School
 Plum Creek Academy
 Rock Canyon High School
 ThunderRidge High School
 Bear Creek High School
 McClain Community High School
 Chatfield Senior High School
 Collegiate Academy of Colorado
 Columbine High School
 Dakota Ridge High School
 Heritage High School
 Littleton High School
 Littleton Options High School
 Heritage High School
 Chaparral High School
 Ponderosa High School

Figure 2.25: Service Area Diagram



2. PROGRAM OFFERINGS

Projected growth in ACC's healthcare offerings are expected in Nurse Aide and Emergency Medical Services.

In addition, we plan to expand our workforce training efforts. Workforce training areas include:

- Medical Assisting apprenticeship programs in collaboration with area healthcare providers
- EMT and Paramedic Refresher courses
- Colorado EMS Instructor Series - The courses in this series were developed through the Emergency Medical and Trauma Services Section of the Colorado Department of Public Health and Environment.
- EMS Skills Instructor - The skills instructor assists primary instructors through interaction with learning in laboratory, scenario, and simulation settings as well as evaluating learner performance in testing situations.
- Heartsaver, First Aid, CPR and AED - This OSHA approved training is designed for anyone with limited or no medical training who needs a course completion card in first aid, CPR and AED use to meet job, regulatory or other requirements.
- BLS Provider - The BLS Provider training meets the requirements of American Heart Association Basic Life Support for those who work in Emergency Services, Health Care and other professional areas.

The ACC EMS Academy will offer a broad curriculum from Emergency Medical Technician certificate to a Paramedic degree and continuing education offerings. This effort will create a seamless education and career path from certificates to degrees including a new Emergency Service Administration Bachelor of Applied Science degree.

Starting Fall 2018, ACC will offer four-year Bachelor of Applied Science (BAS) degrees in career and technical fields as legislated in early 2014. ACC's first BAS degree is in the area of Emergency Service Administration. The degree was approved by the Colorado Department of Higher Education, Colorado Commission on Higher Education and the Higher Learning Commission in 2017.

The BAS program offers a comprehensive educational program to prepare a new generation of leaders in the field of emergency services in both governmental agencies, public and private sectors. It provides the foundation and skills for professionals in emergency services to advance into a leadership position and practice a proactive leadership in unpredictable and catastrophic situations requiring multi-agency collaboration and coordination to minimize risk to responders and the public.

The BAS program was created using reverse engineering concepts in collaboration with employers in a multitude of public and private safety sectors including law enforcement, healthcare, public transportation, emergency management homeland security, and criminal justice. The curriculum blends theoretical perspectives with professional practice necessary to enhance resiliency for communities and leverage capabilities and resources to deal with emergency situations. Students will apply and integrate learned material in emergency simulated exercise and internships.

3. ENROLLMENT PROJECTIONS

Enrollment at signature health programs at ACC is projected to grow. Findings from the Colorado Workforce Development Council report that jobs in the health programs have strong growth. Each year Colorado Workforce Development Council analyzes Colorado's labor market information to highlight occupations that show above average growth rates, high annual openings and pay a living wage. Looking at these jobs helps to anticipate the education/training required.

Growth in ACC's service area of Douglas County is one of the highest in Colorado. ACC is addressing this growth with the development of the Castle Rock campus that will operate in relationship with the Littleton campus. Health programs in Castle Rock will have the opportunity to share Littleton's simulated learning areas as part of the required clinical education.

Recent growth has resulted from the transfer of HealthONE programs to the Littleton campus. Arapahoe Community College (ACC) has accepted gifts from HealthONE and Swedish Medical Center of training equipment and more than 10,000 hours of annual clinical placement for the Emergency Medical Technician (EMT) and Paramedic students of Colorado. The equipment and ongoing commitment to students make it possible for ACC to take Emergency Medical Service (EMS) education to new levels of creative potential through the ACC EMS Academy.

The legacy of quality EMS education that was started in our community by Littleton Fire and Swedish Medical Center, will continue as ACC expands the EMS Academy. The ACC EMS Academy will now offer two principle programs, the ACC HealthONE Paramedic Education Program (PEP) and the ACC EMT Education Program. The ACC EMS Academy will offer this broader curriculum beginning in the spring of 2017 on the Littleton and Parker campuses of Arapahoe Community College. This new effort will create a seamless education and career path from certificates to degrees including a new Emergency Service Administration Bachelor of Applied Science degree which is in the final planning stages and scheduled to launch Fall of 2018.

4. COMMUNITY DRIVERS AND PARTNERS

ACC has existing and well-maintained community relationships with health care partners, economic development councils, other educational partners, and ACC's Foundation that are integral with the past and ongoing success of health programs.

ECONOMIC DEVELOPMENT COUNCILS

ACC works closely with Economic Development Councils in Arapahoe, Denver, and Douglas County. These partners include in part the South Metro Denver, Parker, Castle Rock, and South Metro Business Partnership. Councils serve as liaisons between business' and industry's training and employment needs, assisting ACC in tailoring curriculum to meet workforce opportunities and development. As members of the Colorado Department of Labor and Employment's statewide network of workforce centers, these councils serve as a critical resource to connect people, businesses, and educational resources throughout the metropolitan region.

EDUCATIONAL PARTNERS

In addition to serving high schools throughout the metropolitan area, ACC continues to grow their relationships with K-12 schools and higher education institutions with health programs, creating pathway models for students for career development from high school through higher education. ACC's Nurse Aid program has an active concurrent enrollment program.

FOUNDATION

The primary responsibility of the ACC Foundation Board of Directors is to raise and manage private support for ACC and to effectively advocate for the college to its various constituencies. It is the responsibility of each ACC Foundation Board member to support and assure the successful implementation of the foundation and college strategic plans. The Foundation Board represents a cross section of professions and communities. The ACC Foundation will actively support the Health Programs Integration Plan through a capital campaign.

HEALTH CARE PARTNERS

ACC has long-term relationships with Health Care providers in all the counties served by the College in the surrounding metropolitan counties. There are over 300 partnerships in Health professions and institutions noted below. These partners serve as locations for student's clinical experiences which are an integral part of ACC's health programs.

Health Care partners serve on advisory committees for ACC. Serving in this advisory role, their feedback was instrumental in the structuring of the BAS degree. These groups have and will continue to provide job opportunities for students, attend career fairs and collaborate with ACC as a site for refresher courses and certification for their employees. A sample of these partners is listed below.

AMBULATORY CARE
BEHAVIORAL HEALTH
CARDIOLOGY CENTER
CLINIC
COLORADO COUNTY JAILS
CONTINUING CARE
COMMUNITY MENTAL HEALTH
EMERGENCY MEDICINE &
PARAMEDIC
EMS

HEALTH INFORMATION
CONSULTING
HOME HEALTH AGENCY
HOSPICE
HOSPITAL
INFERTILITY CLINIC
LONG TERM ACUTE CARE
MEDICAL LAB
MIDWIFERY CLINIC
NURSING HOME

PHARMACY
PHYSICAL THERAPY
PHYSICIAN OFFICE
PRIVATE AMBULANCE
PRIVATE PRACTICES
PSYCHIATRY
PSYCHIATRIC FACILITY
REHABILITATION CARE
SKILLED NURSING FACILITY
SUB-ACUTE REHAB

OB/GYN
OUTPATIENT ORTHO
PATIENT TRANSPORT
PEDIATRIC HOME HEALTHCARE
SURGERY CENTER
UNIVERSITY
URGENT CARE
FAMILY PRACTICE
FIRE STATION
GERIATRIC CARE

D. SPACE NEEDS

1. CLASSROOM UTILIZATION

Utilization of classrooms and teaching laboratories was examined using ACC’s Fall 2017 course and facility data. The utilization analysis included scheduled classroom use by day and time of day from Monday-Friday, between 8:00am and 5:00pm. It also analyzes the average student occupancy percentage during the same time periods.

The referenced “time” utilization is based on a target of 67% of the 45-hour week per CDHE as identified above. To meet the target, standard rooms should be used 30 hours per week in total.

The referenced “occupancy” utilization compares the class size to room capacity. The analysis is based on a similar 67% target set by CDHE for each individual course, each room per day, and the weekly averages.

Most of the health classrooms and lab space exceed the 67% target for “time” utilization and approximately 62% of the rooms exceed the “occupancy” utilization. These numbers indicated that the current classrooms dedicated to health programs do not have the capacity for the anticipated 15-18% of growth over the next five years.

Annex Room Usage	Course Cap Percentage by Hour					Course Cap Percentage by Hour				
	1420 - EMS					1590 - EMS				
	M	T	W	R	F	M	T	W	R	F
Time										
7:00-7:30										
7:30-8:00						82.35%	82.35%	100.00%	100.00%	88.24%
8:00 - 8:30	60.00%	80.00%	60.00%	80.00%		82.35%	82.35%	100.00%	100.00%	88.24%
8:30 - 9:00	60.00%	80.00%	60.00%	80.00%		82.35%	82.35%	100.00%	100.00%	88.24%
9:00 - 9:30	60.00%	80.00%	60.00%	80.00%		82.35%	82.35%	100.00%	100.00%	88.24%
9:30 - 10:00	60.00%	80.00%	60.00%	80.00%	44.00%	82.35%	82.35%	100.00%	100.00%	88.24%
10:00 - 10:30	60.00%	80.00%	60.00%	80.00%	44.00%	82.35%	82.35%	100.00%	100.00%	88.24%
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11:00 - 11:30	60.00%	80.00%	60.00%	80.00%	44.00%	82.35%	82.35%	100.00%	100.00%	88.24%
11:30 - 12:00	60.00%	80.00%	60.00%	80.00%	44.00%					88.24%
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4:30 - 5:00	60.00%	80.00%	60.00%	80.00%	44.00%					
5:00 - 5:30										
5:30 - 6:00										
6:00 - 6:30	48.00%	48.00%	48.00%	48.00%				40.00%		
6:30 - 7:00	48.00%	48.00%	48.00%	48.00%				40.00%		
7:00 - 7:30	48.00%	48.00%	48.00%	48.00%				40.00%		
7:30 - 8:00	48.00%	48.00%	48.00%	48.00%				40.00%		
8:00-8:30	48.00%	48.00%	48.00%	48.00%				40.00%		
8:30 - 9:00	48.00%	48.00%	48.00%	48.00%				40.00%		
9:00 - 9:30	48.00%	48.00%	48.00%	48.00%				40.00%		
9:30 - 10:00	48.00%	48.00%	48.00%	48.00%				40.00%		
percent use from 8am-5pm	100.00%	100.00%	100.00%	100.00%	83.33%	83.33%	83.33%	83.33%	83.33%	94.44%
Percent use from 5pm-10pm	80.00%	80.00%	80.00%	80.00%	0.00%	0.00%	0.00%	80.00%	0.00%	0.00%

Figure 2.26: Classroom Utilization Example

2. SPACE NEEDS BY FUNCTION

Based on the information collected from the various health programs, room data sheets (included in the Appendix) were created to identify the specific space needs of each program. Detailed development of these rooms shows that a majority of the existing health program classrooms, labs, and storage spaces are undersized for the equipment in the spaces and the number of students. Space needs were further analyzed based on projected growth, existing footprint of the Annex and desire to cross-pollinate programs. Similar teaching styles, equipment usage, and classroom counts were studied to determine which spaces could become more flexible and be shared by multiple health programs for the most efficient use of space.

Key findings include:

- Health program spaces will be focused on academic, simulated and informal learning spaces. The health faculty and staff indicated there is no need for redundant spaces that exist in the Main Building. These types of spaces include: coffee shop, computer testing, library, and lecture hall.
- Simulation spaces that represent a number of health care professional environments including those found in medical office buildings, hospital, physical therapy environment, and clinics can be used across all health care programs.
- One large flexible space for the use of all health programs will be at the center of the simulations spaces. This room will be flexible to serve as a simulated ICU, skills testing area or for large meetings. A fold-able partition should be provided to divide the space into two rooms.
- A flexible simulation area with connections to the outside can be staged with props or videos for a variety of experiences.
- A simulated home environment is useful across multiple programs including in part: EMS, Nursing, CNA, and Physical Therapist Assistant.
- The majority of the health programs were in need of additional storage for both supplies and large equipment.
- Classrooms with integral storage spaces and storage located near a classroom is required.
- A variety of storage spaces is required ranging from space for stationary hospital beds, large equipment and supplies.

The program space summary on the following page includes only program spaces in the Annex studied in this Program Plan. The assigned square footage of the health programs represents approximately a 50% increase over the existing spaces. It should be noted that final square footages may require some adjustment based on existing conditions.

SIMULATED LEARNING

"Simulation is the imitation or representation of one act or system by another. Healthcare simulations can be said to have four main purposes – education, assessment, research, and health system integration in facilitating patient safety. Each of these purposes may be met by some combination of role play, low and high-tech tools, and a variety of settings from tabletop sessions to a realistic full mission environment. Simulations may also add to our understanding of human behavior in the true-to-life settings in which professionals operate. The link that ties together all these activities is the act of imitating or representing some situation or process from the simple to the very complex. Healthcare simulation is a range of activities that share a broad, similar purpose – to improve the safety, effectiveness, and efficiency of healthcare services."

Society for Simulation in Healthcare

Figure 2.27: Health Programs Integration Renovation Square Footage Comparison

Space Type	Quantity	Square Footage*	Total Square Footage	Cohort Size	FTE	Comments
Health Programs						
Emergency Medical Services						
EMS Classroom	1	800	800	60		Adjacent to storage
EMS Classroom with Simulated Ambulance	1	1,170	1,170			
Storage	1	200	200			
Physical Therapy						
Physical Therapy Classroom	1	1,350	1,350	20-24		
Nursing 						
Nurses Aide						
Nursing Classroom	3	813	2,439	60 (3 cohorts of 20)		Daytime program
Nursing Storage	1	200	200			
Nursing Skills Lab	1	1,025	1,025			Simulation suite will support lab training
General Health Shared						
General Health Classroom	1	700	700			
Conference Room	1	450	450			
Kitchenette	1	150	150			
Simulated Education Environments						
Large Simulation Room	1	1,500	1,500			
Simulated Hospital Room	1	360	360			
Simulated Exam Room	1	180	180			
Simulated Labor and Delivery Room	1	440	440			
Simulated Domestic Environment	1	760	760			
Flexible Simulation Room	1	760	760			Location for simulated ambulance
Skills Breakout Room(s)	3	170	510			Shared with other health programs
Integrated Storage Room	1	180	180			
Control Room	1	290	290			
Storage Shared Supplies	1	400	400			
Simulated Reception	1	160	160			
Simulated Lobby Student Gathering	1	1,800	1,800			
Health Programs Staff and Faculty						
Director's Office: Nursing	1	140	140		1	
Nursing Coordinators	2	70	140		2	Share 140 SF office
Nursing Faculty	7	70	490		7	
Nurses Aid Faculty	1	70	70		1	
EMS Program Director	1	140	140		1	
EMS Faculty	3	70	210		3	
Clinical Coordinator	1	70	70		1	
Support Staff (Nursing and EMS)	2	70	140		2	
Allied Health Director	1	140	140		1	
HIT Faculty	2	70	140		2	
PTA Faculty	2	70	140		2	
MAP Faculty	1	70	70		1	
Health Program Summary			17,894		24	
Physical Education						
Fitness Center Reception	1	160	160			
Locker Rooms	2	400	800			
Director's Office: Physical Education	1	140	140			
Coordinator	1	70	70			
Staff	1	70	70			
Storage	1	400	400			
Physical Education Summary			1,640			
Business and Computer Programs						
Classrooms						
General Classroom (Business)	3	750	2,250			
General Classroom (Computer)	2	660	1,320			
General Classroom (Business Computer shared)	1	750	750			
CNG Lab and Server Room	1	980	980			
Business and Computer Offices						
Director's Office: Computer	1	140	140		1	
Faculty Computers	4	70	280		4	
Business Director	1	140	140		1	
Business Faculty	5	70	350		5	
Kitchenette	1	70	70			
Business and Computer Summary			6,280		11	
Support Space						
Word Graphics	1	1,183	1,183			
Restrooms	4	500	2,000			
Janitor Closet Shared Storage	1	500	500			
Vestibule	1	360	360			
Electrical IT Water Entry Rooms	4	150	600			
Support Spaces Summary			4,643			
<i>Note estimated square footages</i>						



IMPLEMENTATION & DESIGN CRITERIA

iii. IMPLEMENTATION + DESIGN CRITERIA

A. SPATIAL RELATIONSHIPS AND CRITICAL DESIGN ELEMENTS

1. GENERAL DESIGN CRITERIA

HEALTH PROGRAMS

As a signature program at the Littleton campus, a new identity and enhanced entrance for health programs will be created for the Annex. The heart or hub of the renovation will be new simulated learning environments that will be one continuous experience from arrival through a simulation suite. These experiences will provide students with outcomes that directly support various healthcare careers.

2. SPACE DESCRIPTIONS BY ROOM TYPE

HEALTH SIMULATION SUITE

The health simulation suite is the heart of the plan, integrating the health programs into a single shared group of academic spaces with a focus on delivering simulated and active learning experiences. Simulated education spaces are designed to be used across all health programs, educating the students and integrating the healthcare experience across their various specialties. This integrated approach improves collaboration and dialog between healthcare disciplines in the educational environment. This goal and desired outcomes address the need to train healthcare students to reduce medical errors due to miscommunication during a patient's transition between providers.

Students, visitors, and real-world patients will arrive to the Annex at a simulated medical reception desk. The desk will function both as a place where critical skills for patient check-in can be learned and practiced and serve to welcome and orient visitors. Directly adjacent to the desk will be a suite of rooms replicating a variety of healthcare spaces students will encounter in their professions. At this programming phase, ideas for these spaces include hospital and medical office building corridors, a labor and delivery room (LDR), hospital room, and exam room. These rooms will be accessed from a corridor designed to mimic a hospital environment (LVL floors, monitor lights at doors and wide accessible doors). Central to the simulation suite is an eight-bed flexible simulation classroom with a folding wall partition. This flexible space can be used for a variety of simulated experiences including in part an ICU environment, enhanced skills lab and location to practice transfers to an ADA toilet. The suite will be supported with a central shared storage closet for supplies and several storage areas for large equipment.

Technology will be an integral part of simulation suite. Technological advancements in healthcare environments will integrate throughout the spaces with an eye towards flexibility to address future healthcare environments.

The simulated classrooms will include microphones and cameras, tied to the adjacent control room that will allow faculty to remotely monitor and record the student's skills and progress. Details of these spaces and others noted in this section are provided on the room data sheets included in the appendix.

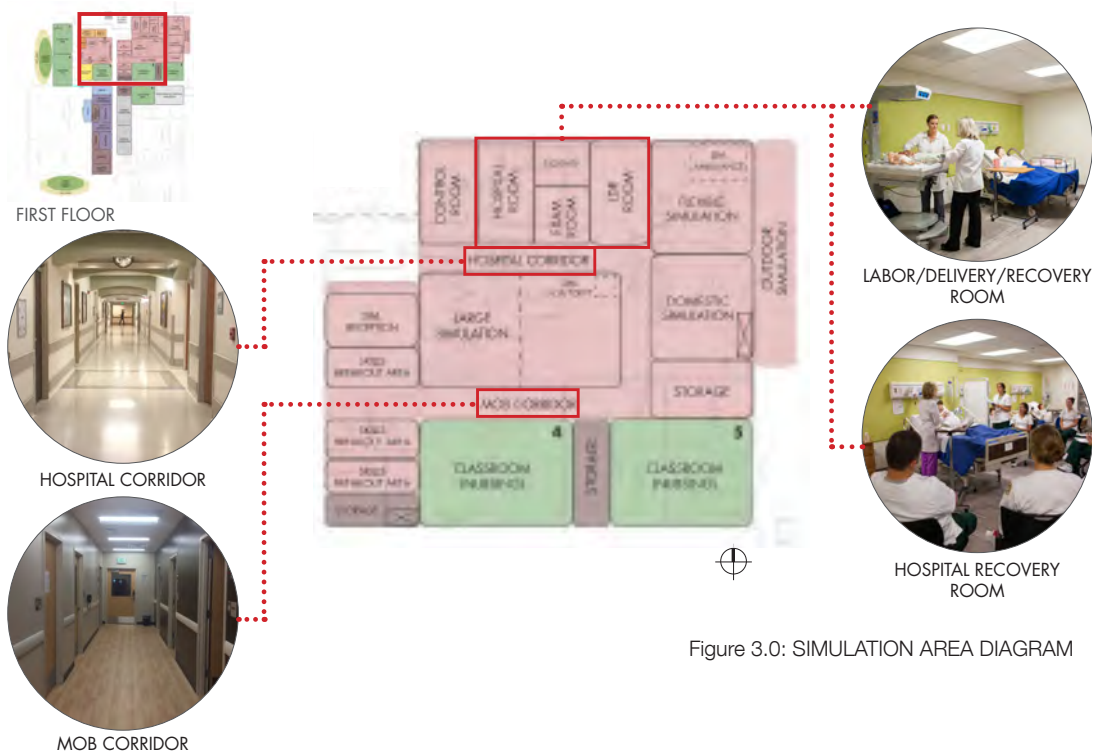


Figure 3.0: SIMULATION AREA DIAGRAM

The east side of the simulation suite contains two flexible simulation environments that have access from the suite and the exterior. The first of these spaces is a flexible room with a simulated ambulance. Audio visual technology and props will be used to create a variety of experiences for critical thinking in real-life experiences. Access to the exterior will provide the opportunity to simulate urban conditions such as street fronts and curbs. The second of these simulation environments is designed around a domestic experience. This space is also supported by AV capabilities and can be used across all programs for home scenarios. Flexibility will be incorporated with props and movable furniture. This space will also access the exterior. Planning of this room will need to take into account water entry service on the east side of the building. Skills rooms and health classrooms will have direct access to the suite.

All spaces in the simulation suite will be connected to the control room. This room may serve as an office for a future staff person and connect technology through to all of the simulated environments.

Skills break out spaces are flexible rooms that can be set up in a variety of configurations for skills testing for all programs.

Health classrooms supporting the health programs will be in close proximity to the simulated classroom allowing flow between lectures, labs and active learning. The rooms will be flexible with tables and chairs on wheels so the learning configuration can be changed and large piece of equipment can be accommodated. Ample space must be provided in order to move tables and chairs to the sides when not in use.

The suite is located at a floor elevation approximately 18" above adjacent Annex finished floor. The cost of lowering the slab was evaluated and was determined to be cost prohibitive at this level of analysis. The access to the suite will be a reconfigured ramp on the north and a new ramp on the south.

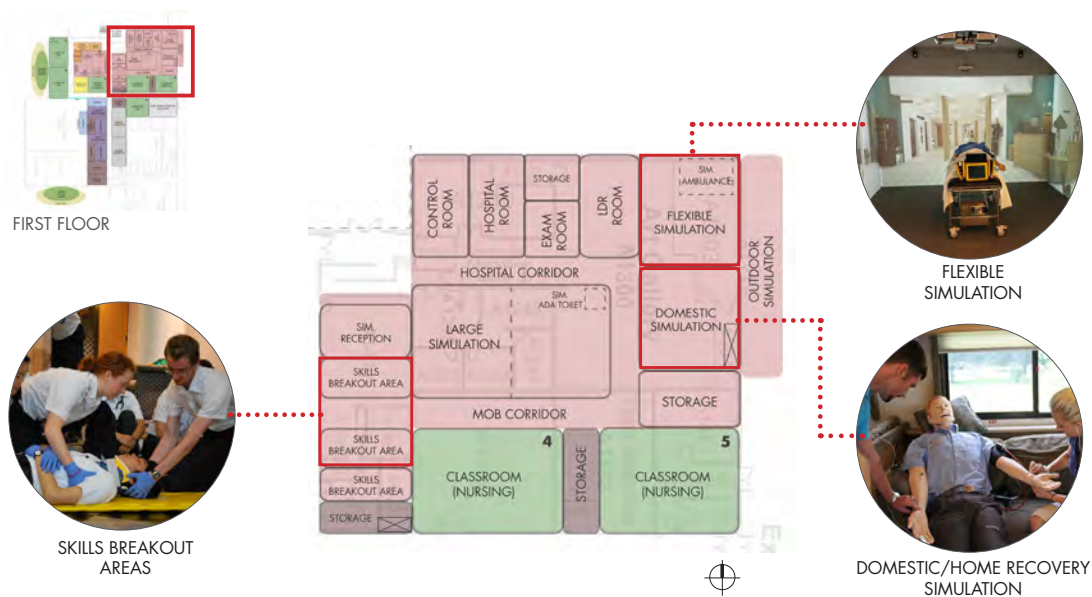


Figure 3.1: SIMULATION AREA DIAGRAM

EMS CLASSROOMS

EMS will require a large flexible classroom with movable chairs and desks with space that can accommodate the simulated ambulance. This room will require ample storage space for active training supplies. EMS intends to use skills breakout spaces and simulated classrooms to teach both clinical and critical thinking skills.

PHYSICAL THERAPIST ASSISTANT CLASSROOM

The proposed physical therapy classroom is approximately 50% larger than the existing classroom to allow for space for both training skills and lecture style classroom experiences. The space is planned to be in proximity to the Fitness Center and outdoor spaces allow for educators to utilize these spaces for skills training.

HEALTH CLASSROOMS

Classrooms are required to be flexible with ample rooms for equipment storage and relocation of table and chairs to accommodate a variety of classroom layouts. Classrooms require access to storage rooms for supplies and equipment. There is a need for one classroom to seat 36 students for larger health programs. As part of this Program Plan, the health programs will be shifting away from a dedicated computer room for testing and instead will utilize the existing computer lab in the Main Building or mobile carts with laptop computers for flexible testing within any classroom.

STORAGE

Across all of the health programs, storage for large equipment and supplies was stated as critically important for academic spaces to function properly. Currently, each program has its own storage. A variety of storage spaces are anticipated include in part a share storage for daily supplies (gloves etc.) and closets for larger equipment. Storage spaces for equipment will require wide openings or double doors for equipment movement.

HEALTH FACULTY

Health faculty will be relocated to a shared suite adjacent to health academic spaces. A variety of office types were explored in the programming phase (examples included in the appendix). A final layout will be determined during the design phase.

OUTDOOR SPACES

Outdoor learning landscapes will be created to support one of the guiding principles of the Master Plan and to support the needs of the health programs. All four sides of the building will be developed for health program use, with the added benefits and enhancing the image of the Annex and creating a destination for the signature health programs.

Arrival to the Annex will be renovated providing students & visitors the experience similar to that of health professional facility. The new entrance will include a vestibule and entry canopy to enhance the building's image. The updated drop-off area will allow students to simulate patient drop-offs.

Two outdoor healing garden areas were developed similar to those at professional health environments studied by the design team. The healing garden and skills area will be accessible from various program spaces and can serve as an informal learning space and destination for studying or lunches.

A variety of walking surface materials and textures will be designed onto the skills area to provide experiences for physical therapy training.

EMS training will continue to utilize the existing ACC parking lots for simulated activities. The exterior area will benefit the health programs with its proximity to the simulation spaces.

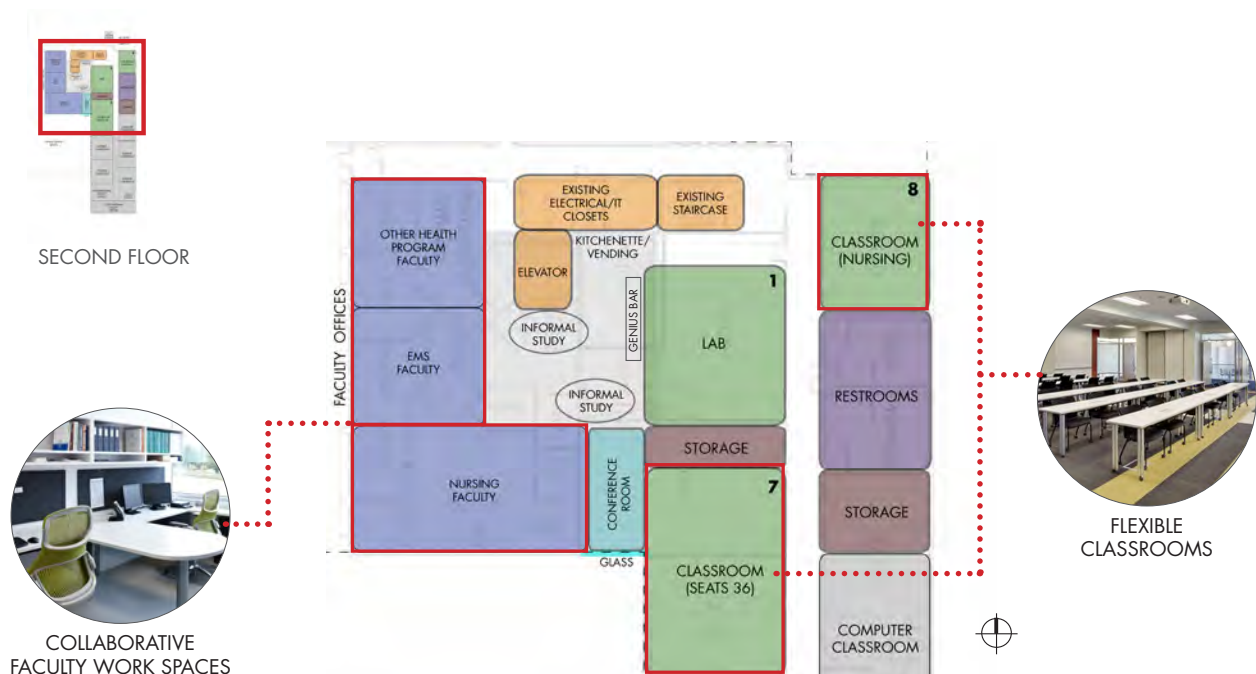


Figure 3.2: SIMULATION AREA DIAGRAM

HEALTH SIMULATION LOBBY

This space will provide an identity and arrival point for students and visitors and be multi-functional for informal student gathering, small lectures or job fairs. Central informal study and gathering space fills a critical need for a place for the health cohorts to meet on campus throughout the day to meet and study in between classes. At this time in programming this space is an opportunity for simulating trends in healthcare environments including in part: a healing gallery for display of artwork or exhibits on health care, kitchenette, digital kiosks with information to healthcare resources and informal seating.

Feedback during the workshop process was that it was important for this space not to become too large and reduce any required classrooms or be provide redundant functions that are available in the main building.

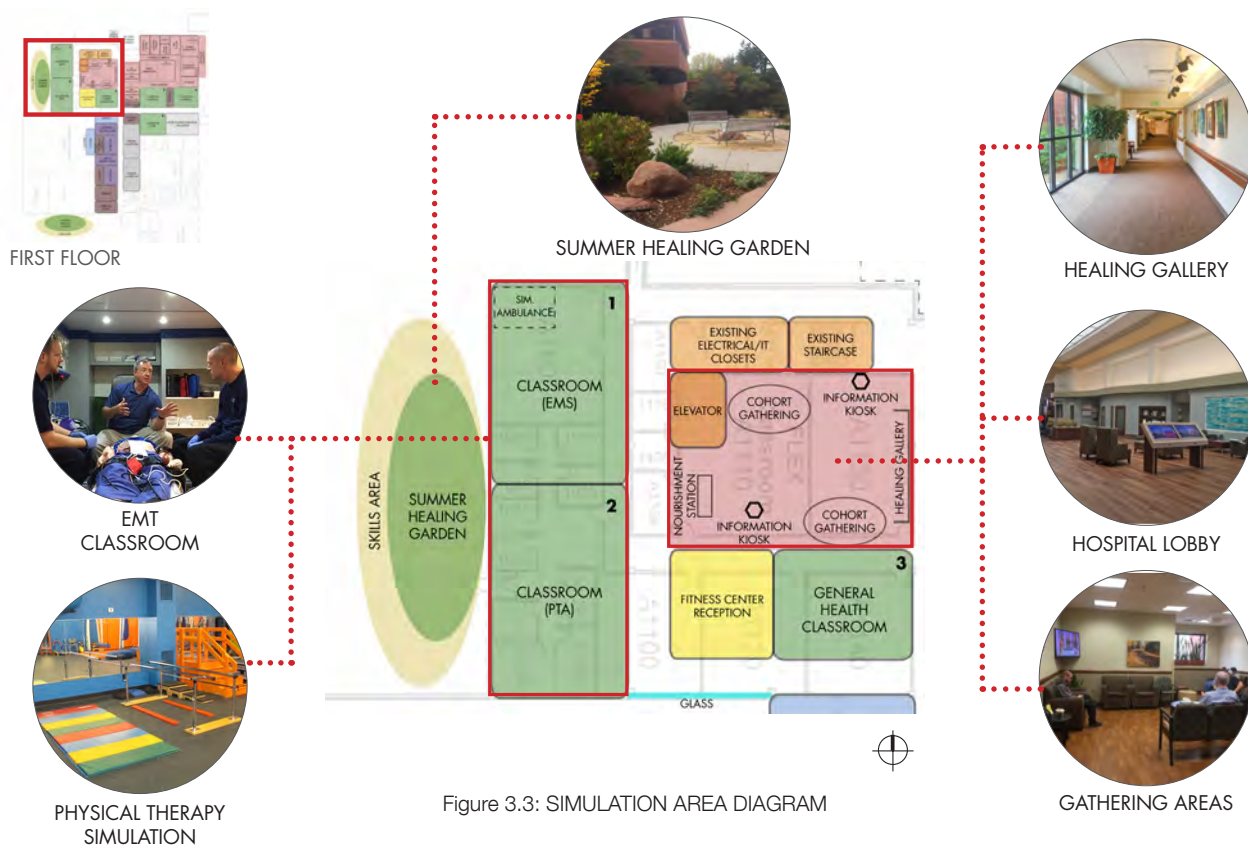


Figure 3.3: SIMULATION AREA DIAGRAM

FITNESS CENTER

The guiding principle to enhance connections between the health programs to the other campus amenities including the Fitness Center was determined by stakeholders indicated that this would be an asset to the health programs. Physical Therapy is well aligned in location and curriculum to utilize the space and equipment in the Fitness Center. The Fitness Center will have enhanced connection through the addition of windows and relocating the reception desk adjacent to the central gathering space. The interior Fitness Center has gone through several recent renovations. Work to be included as part of Health Program renovation in the Annex will be the addition of new fire protection system; replacement of acoustic ceiling tiles, complete demolition and replacement of the locker rooms and restrooms and relocation of offices. Work in this space should be coordinated so that the existing electrical panel can remain in its current location. Storefront on the south side of the Fitness Center will be replaced with storefront in all locations except for the Yoga Studio in which a glazed overhead sectional door will be added. This garage door will have access to the summer healing garden and outdoor skills area.

COMPUTER NETWORKING (CNG)

A classroom dedicated to the Computer Networking program. This classroom with stationary computer desks for students is required. Each station is to be connected with a dedicated circuit to a secure server room potentially at the back of the classroom.

BUSINESS

Business classrooms and faculty will be located together in the Annex building. A variety of office types were studied in the programming phase, with final layouts to be determined in the design phase.

SUPPORTING FUNCTIONS

In order to meet the two key planning goals of the simulated learning hub; a central location with contiguous space, Word Graphics is proposed to be relocated to the south. This space requires a significant amount of power to support the equipment and access from the exterior.

A new custodial closet is planned for the first floor to meet the need to store supplies for the Annex.

ELEVATOR

The Annex renovation will include the addition of a service elevator (Kone Monospace 500, 5000 lb, basis of design) to fill the critical need of access between floors. Two locations were studied and priced, the first internal to the Annex, the second as an addition to the north of the Annex. Preliminary cost analysis indicates the cost difference between the location is negligible. ACC has preference for the centrally locating the elevator so to provide more convenient ADA access, however, the final location will be studied further when the final design for construction commences.

AV/IT

The Health Programs Integration Renovation Program Plan intends to replicate the current and future healthcare environments with integrated technology specifically in the simulation areas. Renovation of the Annex will integrate the power and technology throughout the facility with flexibility to adapt to the future.

B. PLAN CONCEPT AND DESIGN CRITERIA

1. ARCHITECTURE

The Health Programs Integration Renovation is a development of goal #2 of the Facilities Master Plan completed in February 2017 and a direct reflection of the guiding principles established at the beginning of this planning process. The renovated space for health programs will be a focal point for ACC.

Create a facility and instructional spaces for health profession students and workforce to prepare them for careers in current and future healthcare environments.

Create dynamic and flexible educational spaces for shared utilization between like and diverse health programs (Integrate Health Programs).

The health programs are in need of a shared centrally located space that includes classrooms and spaces for simulated and informal learning. The health simulation suite and lobby on the north end of first floor is the nexus of the health programs on the first and second floors. The concentration of health programs around these spaces will improve the overall function of spaces and foster formal and informal connections between programs.

Create an overall environment that supports diversity and inclusivity for all learners and educators.

The addition of an elevator in the Annex is of critical importance to provide access between floors. The health programs envision a service elevator with the size and capacity for a gurney to support skills training for the EMS program. A centralized location would be ideal in the facility however, it will require some structural modifications to the foundation and roof. On the north side of the building, a second location was studied as an addition and was identified on the program diagrams as an alternative solution to be determined in the design phase.

Showers and restrooms will be reconfigured to meet ADA, stair handrails will be replaced, and the ramp at the north end of the Annex will be reconfigured to meet current accessibility codes. The proposed increase in classroom size will enhance access within the classrooms and surrounding equipment.

Enhance connections between health programs and other campus space including the Fitness Center to promote health, wellness and fitness.

The architecture of the Annex does not readily provide visual or physical connections to the campus. Visual connection to the Fitness Center will be created with new windows and will provide views into the shared lobby and gathering space. The reception desk is anticipated to be relocated to be more central and a more visible location, serving both the Fitness Center and the wayfinding desk.

Provide outdoor and indoor gathering space for students, faculty, and staff to encourage integration of health programs and informal learning.

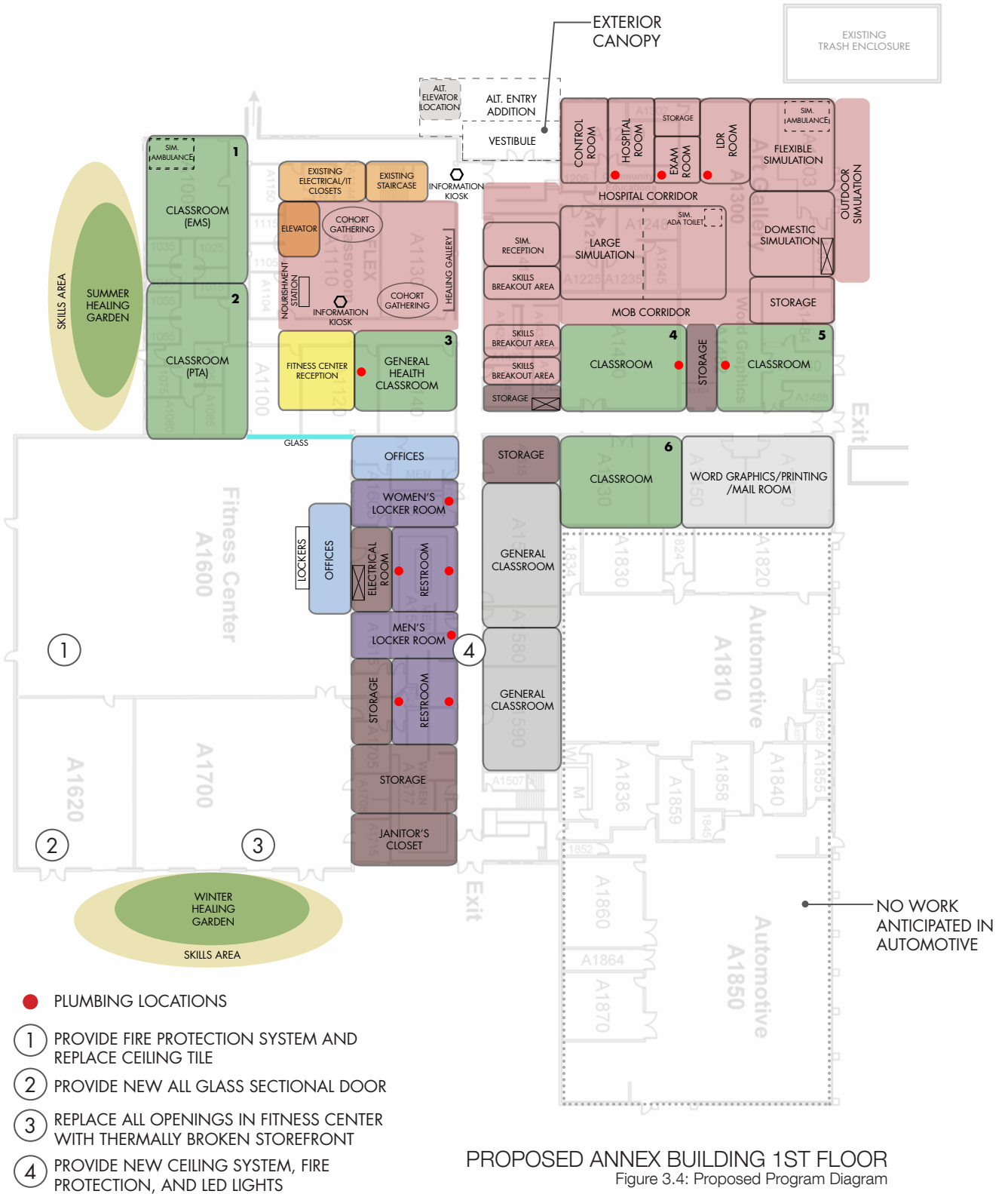
Connections to the site will be developed on all sides of the building. The entrance from the north will be enhanced with a round-about for drop-offs. A new canopy and vestibule will reduce energy loss from the building and mimic a medical care facility. Areas to the west and south of the building will be used for healing gardens and skills training areas. The space south of the building currently has landscaping and outdoor furniture, and with some minor enhancements, will function well as a skills area as well.

With the southern exposure, this space will be well suited for winter use. The exterior area on the west of the Annex is recessed to the first-floor level. With landscape improvements and acoustical separation from the existing mechanical unit. This space could make an excellent shaded, summer heating and skills garden.

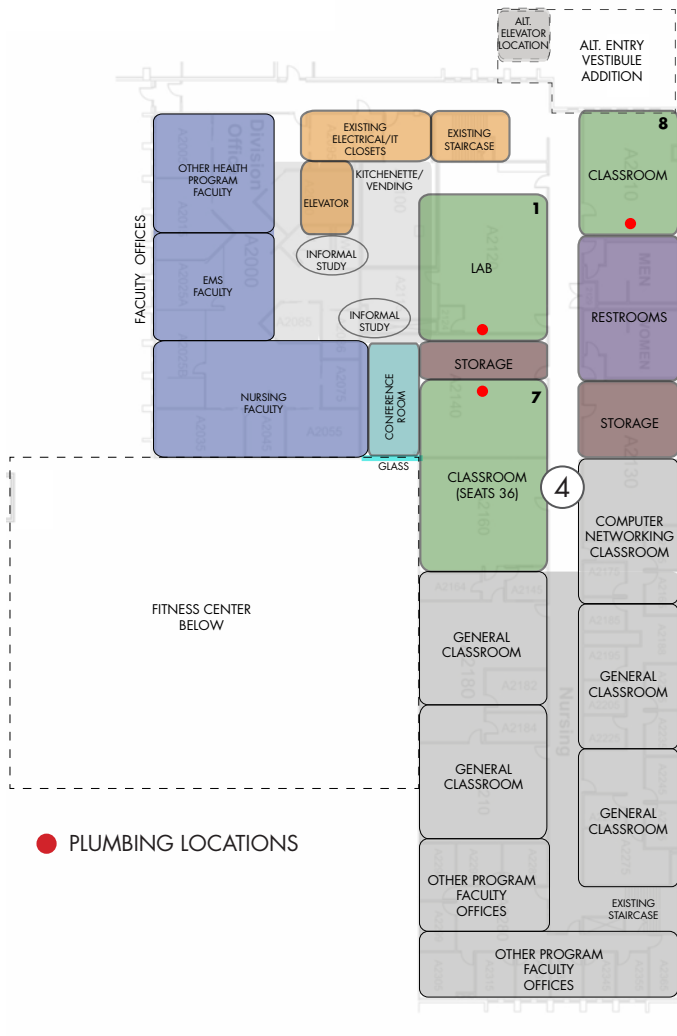
With excellent access to the first floor, PTA and EMS programs can use these spaces as an extension of the academic space. EMS will continue to use parking lots for training and will utilized space to the east of the building that will have exterior elements such as curbs and storefronts connecting into the simulation spaces on the interior.

Business and computer program classrooms and support spaces will be located in the south end of the building on the first and second floors. These classrooms are flexible and can be used for general instruction.

As a state building the applicable code for the renovation will be conform with the codes adopted by the Office of State Architect at the time of permitting the renovation.



PROPOSED ANNEX BUILDING 1ST FLOOR
Figure 3.4: Proposed Program Diagram



PROPOSED ANNEX BUILDING 2ND FLOOR
 Figure 3.5: Proposed Program Diagram

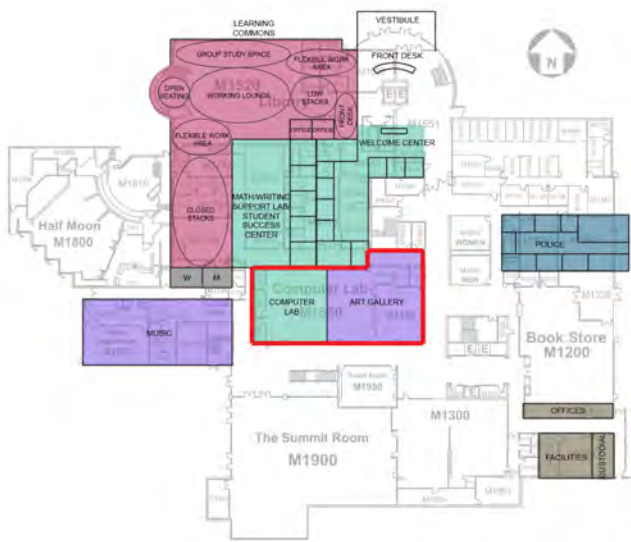
BUSINESS PROGRAM

The business program classrooms will be re-located from the Church Avenue Building to the Annex building in order to co-locate all classrooms and offices in one location.

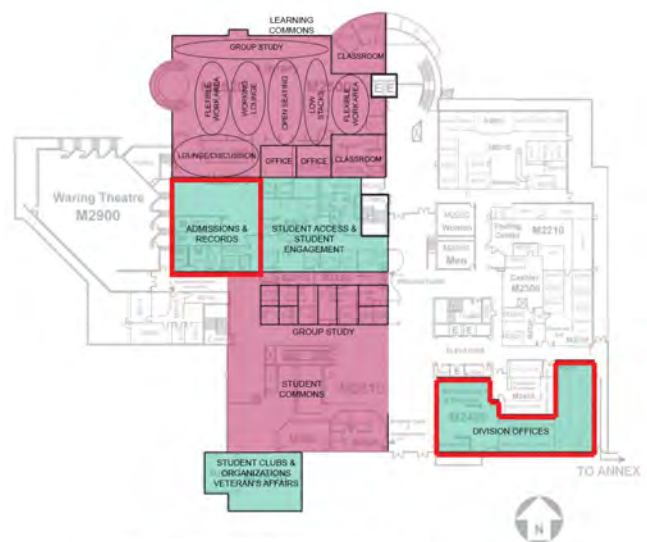
COMPUTER CLASSROOMS

The computer program classrooms and faculty offices will be re-located from the first floor of the Annex to the second floor adjacent to the business program.

The Facility Master Plan indicates relocation of several programs in the Annex in order to consolidate the Health programs in the Annex. The art gallery and associated support spaces will be relocated to a more publicly accessible space in the main building. Division offices currently located on the second floor of the Main building. See diagrams below.



MAIN BUILDING 1ST FLOOR
Figure 3.6: Proposed Programs Diagram - Phase 1 - Red zone depicts remodel area



MAIN BUILDING 2ND FLOOR
Figure 3.7: Proposed Programs Diagram - Phase 1 - Red zone depicts remodel area

CHURCH AVENUE BUILDING

Renovation spaces in the Annex with limited connection to the academic programs in the Main building or Annex will be relocated to Church Avenue. These spaces include two classrooms for Littleton Public Schools, community education, and marketing offices.



CHURCH AVENUE BUILDING 3RD FLOOR
Figure 3.8: Proposed Programs Diagram - Phase 1 - Red zone depicts new programs to relocate to space

2. SITE

BASE SCOPE



Figure 3.9: Site Diagram of Littleton Campus - Base Scope of site enhancements

Site enhancements are proposed as a base scope of work and enhanced scope of work to be priced as an alternate. Site enhancements are an integrated part to enhancing facility access, image and simulated learning experiences. Access from the North and a round about will allow for student access into their facility to mirror arrival at a healthcare facility.

ALTERNATIVE



Figure 3.10: Site Diagram of Littleton Campus - Alternative Scope of site enhancements

Two healing gardens - a summer and a winter garden are proposed on the south and west side of the facility. These spaces will simulate outdoor hospital spaces that encourage patient healing. At ACC these spaces will support informal academic learning. Integral to both spaces will be outdoor skills spaces to simulate skills training for physical therapy.

3. STRUCTURAL (prepared by Martin | Martin Engineers)

GENERAL

The project consists of a renovation to the Annex building of the Littleton campus of Arapahoe Community College. This structural narrative is based on programming documents included in this document, original building drawings from the 1976 addition and a walk-through with the design team and the college on October 16th, 2017. The structural scope consists of adding an elevator interior to the building and providing openings in the structural walls for new windows.

The existing structure is a 2 story precast building with a precast double tee floor and roof with precast wall panels that resist both lateral and gravity loads. The building is founded on cast-in-place shallow spread footings. Based on the original building drawings, the intent of the original structural engineer was to utilize all of the precast wall panels as shear walls.

FOUNDATIONS

New foundations will be required for the elevator pit. While the elevator pit depth is still to be determined, the foundation will consist of a mat foundation under the pit. Due to the proximity of the pit to the footing along grid D/3, care will need to be taken to avoid undermining this footing. The bottom of the existing footing is about 4 feet below the slab on grade, so elevator pits deeper than this may need excavation shoring or other protective measures to avoid damage to the existing structure.

If additional openings beyond what is described below are added, the lateral capacity of the building will need to be evaluated further and reinforcing of the foundations may be required.

SUPERSTRUCTURE

A hole through the second floor will be required to allow for the new elevator. At the location shown, we would demolish approximately half of one double tee and cut into the flanges of the adjacent two tees. Tube steel columns and steel beams each side of the opening would be installed to support the remaining portion of the tee and a small infill between the elevator and the precast girder along grid 3. The infill is anticipated to consist of single span concrete on composite metal deck.

At the roof, there is insufficient overrun clearance for the elevator. At the location shown, we would demolish a portion of one double tee and cut into the flanges of the adjacent two tees. Steel beams each side of the opening would be installed and the new columns will extend up past the roof to support each side of the cut double tees and new roof framing. We would anticipate the roof framing to consist of steel beams and metal deck. The new roof framing will have sufficient clearance from the existing and new rooftop mechanical units.

LATERAL SYSTEM

The existing lateral system consists of both interior and exterior precast wall panels. The IEBC states that if the seismic load in any member is not increased by more than 10% since the building has been construction then an upgrade to the lateral system will not be required. The best way to stay under this limit is to provide punched openings in the middle of the existing precast panels. To keep under this criterion, two 5'-0" wide openings can be placed in the center of the precast panels along grid line F between grids 3 and 4, as well as two 5'-0" wide openings along grid line 7 between grids B and E. Additional opening may be possible, but a full evaluation and upgrade to the building may be required.

Re-opening the existing area that were previously enclosed with masonry block along grid 7 between B and D are acceptable.

STAIRWAY WALLS

The partitions on the east and west side of the exiting north stair are non-structural and will not affect the primary structure if removed as proposed.

CONCRETE REPAIR

The concrete repair noted in some of the documents is being completed as a separate project and is not covered in this narrative.

4. MECHANICAL (prepared by RMH Group)

BUILDING CODES

The current State of Colorado approved building codes apply. Currently in place is the 2015 versions of the International Plumbing, Mechanical, Energy Conservation and Fuel Gas Codes. Design of the facility will need to comply with codes adopted by the Office of the State Architect at the time of permitting.

The Energy Code does not require upgrades to the wall, floor and roof insulation levels for this project. The existing fenestrations can also be reused. New HVAC and plumbing equipment is required to meet the latest code requirements. This is all covered in IECC 2015, Section C503, Alterations.

DEMOLITION

Demolition will be required for installation of the new mechanical systems. For HVAC, all supply and return/exhaust ductwork will be removed in the remodeled areas and in the corridors. This includes the vertical riser ducts from RTU-1 and RTU-2 and all VAV boxes. RTU-7 and all its ductwork will be removed. RTU-9 and RTU-10 will be removed, but the ductwork will be reused. Much of the smaller heating water piping will be removed. HVAC controls will be removed back to the main control panels, but many of the existing control panels can be reused.

For plumbing, all the existing plumbing fixtures (toilets, lavatories, showers, etc.) In the remodeled areas will be removed.

SITE UTILITIES

Domestic Water

The existing 3" domestic water line entering the building in Room A1304 will be reused. It has a reduced pressure back flow preventer and no changes are required.

Sewer

The existing 8" sewer line exiting the north end of the building to the east of the entrance will be reused. No changes are required.

Natural Gas

The existing 4" natural gas line entering the north end of the building to the east of the entrance will be reused. No changes are required.

Fire Sprinkler Water

The existing 6" fire service line entering the building in Room A1304 will be reused. Modifications will need to be made to the piping in the water entry room, which will be discussed elsewhere.

HVAC

Air Supply and Exhaust

Air supplied to the rooms for heating, cooling and ventilation will be variable flow (VAV). There will be VAV boxes for each zone with hydronic reheat coils for temperature control. The main supply and return fans will be operated as variable speed units. There will be 50 VAV boxes (zones) with reheat coils that will replace the existing units.

- An existing air-handling unit, RTU-7, which serves the northeast corner of the first floor will be replaced with a new unit. The AHU will incorporate supply and return fans, a refrigeration system with modulating compressors for cooling and a hot water coil for heating. It will be sized for about 20,000 CFM and 30 tons of cooling. See the mechanical equipment schedules in the appendix for more information on the unit. A new roof curb will be required for the unit along with revisions to the roofing.
- Existing air-handling units, RTU-1 and RTU-2, will be reused. They serve much of the area being remodeled and were replaced about three years ago.
- Two existing small units, RTU-9 and RTU-10, will also be replaced. They serve areas in the Automobile Repair Wing. These will be sized for 6 tons of cooling and use natural gas for heating. No changes will be made to the ductwork for these units, but new adapter curbs will be required.
- There will be three IT rooms. Each room will have a small (1 ton cooling) split-system, dedicated cooling unit. The condensers will be mounted in the air-return plenum serving adjacent spaces.

For the remodeled areas that will be served by RTU-1, RTU-2 and RTU-7 all new ductwork will be required. This will include new medium pressure ducts (mains) run down the center of the areas served, with branch ducts to each VAV box. For the two existing units, RTU-1 and RTU-2, new risers (vertical ducts) will need to be installed from the underside of the units down to the first floor.

New ductwork and diffusers will be required downstream of each VAV box as well.

A new exhaust fan, EF-1, will be added to serve the remodeled locker rooms and restrooms on the first floor. A second new exhaust fan, EF-2, will serve the restrooms on the second floor. Both fans will replace existing units. See the mechanical equipment schedules for additional information. New ductwork and air grilles will be required for the areas served by these fans.

Heating System

Heating water for the Annex comes from the heating plant in the penthouse of the Main Building. The intent is to continue using that source. The new RTU-7 will be a little bigger than the unit it is replacing, so some additional heating water will be required. New heating water distribution pumps serving the Annex Building will replace the two existing ones located in the Main Building Penthouse (see the mechanical equipment schedules). The assumption will be made that the required extra heating water can be obtained from the existing pipe sizes using the new pumps.

Heating water piping will be run to each VAV box for connection to the reheat coils. The existing piping mains will be reused, with new branches running to each reheat coil.

HVAC CONTROLS

The campus standard is to use backnet DDC controls. This will be followed for the Annex Building remodel. Carrier controls will be used for the VAV boxes and the new air-handling unit, RTU-7. The new controls will be integrated into the campus network, with graphics on the controls computer covering all the new HVAC equipment.

PLUMBING

General

New plumbing fixtures (sinks, toilets, faucets, lavatories, etc.) will be required throughout the building to support the program needs and required ADA upgrades. In some cases plumbing fixtures will be installed for appearances only in the health simulation classrooms (see Room Data Sheets). They will not be connected to water, waste or vent lines.

Waste and Vent

There is a main 8" waste line running north/south through the east side of the first floor remodeled area. New sinks in the classrooms, labs and simulation rooms can be connected to that line. To install the new lines the concrete slab floor will need to be saw-cut and trenches dug and filled by hand. A single 3" waste line, about 40' long will be required for all the new sinks. There will be 2.5" branches run to each sink.

A single 2.5" vent line will need to be run through the roof for the new sinks, with 2" branches to each sink.

A small sump pump will be added to the new elevator pit, with controls that stop the pump when it detects hydraulic fluid and water and issues an alarm.

Domestic Water

Hot and cold domestic water will be routed to all new plumbing fixtures as noted on the architectural plans. There is existing hot and cold water within 50' of the new sinks. A new hot water recirculation main will need to be run (100', ½" size) to accommodate the new sinks.

Exterior hose bibs (¾") will be mounted on walls closest to each of the two Healing Gardens.

Domestic hot water is currently generated with steam-powered tank heaters located in the Main Building. There is adequate capacity for the changes being made.

As an alternate, a new gas-fired tank-type heater is being explored (see the plumbing schedule). For the alternate, a 1" gas line branch will need to be run to the new heater, which will be located where the existing water heater is located in a room adjacent to the northwest corner of the Annex Building. A combustion air intake duct and a 6" flue will need to be run from the first floor to the second floor roof.

Plumbing Fixtures

The current men's and women's restrooms on the first floor and the second floor will be fully renovated. The same is true of the men's and women's locker rooms on the first floor. New plumbing fixtures will be installed throughout. The floor plan will change enough that the current locations of fixtures will change, so the piping connections will all have to be revised to accommodate the new layout. Existing plumbing piping will be reused as much as possible.

All waste line revisions on the first floor will require saw-cutting the floor slab and trenching and backfilling by hand.

Assume three new shower stalls in each locker room.

Three new, ADA compliant, refrigerated water coolers will be added.

Compressed Air System

Several of the simulated patient rooms incorporate active compressed air outlets. A small, central compressed air system will be mounted in a storage room near all the rooms requiring compressed air. A 1.5" main line will be run, with ½" branch pipes to each station. The piping will be Type L copper. The new compressor will be sized for 25 CFM and have a 50 gallon storage tank. The compressor will be oil-free. Hospital-grade air is not required.

FIRE PROTECTION

A wet-pipe fire protection sprinkler system will be installed to serve all rooms of the building. Currently, the Automotive Repair area is the only space that has sprinkler coverage in the Annex Building. The sprinkler lines and heads in that area will not be changed, but it will be connected to the new overall building system.

New areas that will be added include all the remodeled spaces, the corridors and entryways, and the Fitness Center. The Fitness Center is 14,100 ft².

The existing fire line entering the building will be reused, but the entire entry piping assembly, including the backflow preventer, will need to be replaced.

The system will be designed per NFPA 13. Piping materials will all be Schedule 40 carbon steel.

5. ELECTRICAL
(prepared by RMH Group)

BUILDING CODES

Current codes, pertaining to the electrical system, are the NEC 2014 and the IECC 2015. Design of the facility will need to comply with codes adopted by the Office of the State Architect at the time of permitting.

ELECTRICAL DISTRIBUTION

Currently the Annex building is served by a 1200 amp, 480V, switchboard (Main Distribution Panel-MDP). The MDP serves the mechanical loads, lighting panels and 480-208/120V transformers and 208/120V panels. The majority of the electrical infrastructure is well beyond its useful lifespan and spare parts for this equipment are unavailable or difficult to come by. There are currently safety concerns with the age of some of the panels, wiring and methods of installation. The age of the existing electrical panels varies significantly, and only a few are relatively new. Electrical equipment begins to deteriorate due to absorption of moisture, daily temperature swings, collection of dust, condensation, mechanical wear of circuit breakers, and deterioration of insulation. Our recommendation is to replace the 1200 amp switchboard (Main Distribution Panel) and the majority of the electrical panels in the building. Any electrical equipment over 15 years old, we recommend replacing at this time.

It is expected that the existing 1200 amp service feeding the Annex should have sufficient capacity to support the remodel, the additional loads and the new elevator.

The current space that is allocated for electrical rooms will be reused. There are several electrical panels located in corridors throughout the campus. Some of these panel boards will be consolidated into the electrical rooms; however, some of the panel boards located in the corridors will need to remain in order to minimize voltage drop. All the electrical panels are to be replaced to consolidate the electrical system as a whole. Replacing the panels with a single manufacturer's equipment will also reduce the stock replacement parts required. The weakest and fastest degrading component of any electrical equipment is the insulation; therefore, we recommend replacement of all the branch wiring from the panels to the sources. Receptacles should also all be replaced due to their age and due to the need to remove them when replacing the branch wiring. Power will be provided to the new mechanical equipment as required. The minimum requirements for the branch distribution system shall include 3/4" conduit, THHN/THWN wiring, all copper conductors, and 20A breakers.

Existing electrical conduit will be reused wherever possible, after it has been deemed to be serviceable.

Refer to the one-line diagram in the appendix for additional information.

SNOWMELT

It is recommended that the existing snowmelt system be replaced with a new electric snowmelt system at the main entry of the Annex Building.

LIGHTNING PROTECTION

A lightning protection system will not be required on the Annex building, due to the lack of height and the taller buildings surrounding it.

FIRE ALARM

This building will be fully sprinklered; therefore the code requirements for the fire alarm system are greatly reduced. Smoke detectors will be required in return air ducts with air velocities of 2000 CFM or greater. Water flow and tamper switches will be required on the sprinkler stand pipe. A visual/audible alarm device on the exterior of the building that is activated upon water flow will be provided. Fire alarm notification horn-strobes will be provided for occupant alerts during an alarm condition. Manual pull stations will be provided at all exits to grade.

LIGHTING

The lighting systems will be designed to conform to the illumination level standards as set by the Illumination Engineering Society Handbook - Tenth Edition.

It is recommended that the new lighting systems be comprised of LED luminaires to reduce energy and maintenance cost. The LED systems will be dimmable to allow for dimming in areas that have adequate daylight and where lower lighting levels are required such as in offices, laboratories, classrooms, conference, and meeting rooms. Luminaire types will be coordinated with the architect and owner.

The following minimum standards will be used for evaluating the LED lighting systems:

LED Luminaire Performance Requirements:

LED luminaires will meet the following performance requirements:

- Minimum 50,000 hour life rated using IES LM-80-2008 testing
- Photometric testing using IES LM-79-2008 testing
- 3500K color temperature with 80+ CRI Five to ten year warranty

LED Luminaire Driver Performance Requirements:

- Minimum efficiency of 85%
- Total harmonic distortion - 20% or lower
- Power factor of 90% or above
- Dimmable with 0-10 volt control signal
- Five to ten year warranty

Linear direct/indirect suspended pendant LED fixtures will be used in the administrative areas, conference room and labs. LED task lighting shall be integrated with office and lab furniture.

Recessed 2'x4' LED lighting will be used in the corridor spaces. Lights will be on 12-foot or 14-foot spacing depending on the layout.

Recessed wet location listed LED downlights will be used in the locker rooms and shower areas. A wall mounted LED direct indirect light will be used over the vanity area of the restrooms.

LED strip lights will be used in the mechanical and electrical rooms, janitor’s closets, storage rooms, and IT rooms.

Wall mounted LED emergency lights will be provided for egress lighting on the exterior of the building.

Site lighting will be upgraded as needed and added in the Outdoor Simulation Space and in the Healing Gardens.

See chart below for recommended lighting levels and target lighting power densities (LPD) for different program areas within the building.

Room/ Area Type	Light Level Avg. Foot-candles	Target LPD Watts/SF	Controls	Notes
Corridors	10-15	0.4	Ceiling occupancy sensors	
Open Offices	30	0.6	Local dimming with ceiling mounted occupancy sensors	1
Private Offices	30	0.6	Wall dimmer with integral vacancy sensor	1
Laboratories	50	0.8	Local dimming with ceiling mounted occupancy sensors	2
Conference Room	30	0.6	Local dimming with ceiling mounted vacancy sensor	3
Huddle Room	30	0.6	Ceiling mounted occupancy sensor	
Restrooms	15	0.6	Wall switch vacancy sensor	
Storage Rooms	10	0.4	Wall switch vacancy sensor	
Mechanical, Electrical and Data Rooms	15	0.4	Local switching	
Emergency Egress	1 (.01 min)	N/A	N/A	

Notes:

- 1 Light level indicated is for general ambient room lighting. Local task lighting will provide 50 foot-candles at work surfaces. Task lighting will be connected to receptacle with occupancy sensor control.
- 2 Light level indicated is for general ambient room lighting. Local task lighting will provide 100 foot-candles at work surfaces. Task lighting will be connected to ceiling occupancy sensor control.
- 3 Lighting at the front of room will be controlled separately from main room to facilitate audio visual presentations.

C. SUSTAINABLE DESIGN CRITERIA

The Health Programs Integration Renovation of the Annex will be structured around the Office of State Architects Sustainable guidelines for a substantial renovation. Due to the nature of this renovation with an existing mechanical system tied to the Main Building, certification may be challenging. The following sustainable design features that may be included in the final design:

- Integration Process
- Meet Location and Transportation criteria
- Indoor Water Use reduction with low flow fixtures in restrooms and locker rooms
- Energy and Atmosphere
 - Incorporation of LED Lighting
 - Commissioning
 - New energy efficient air handling unit
- Material and Resource points with locally supplied materials
- Indoor Environmental Quality
 - Low-Emitting Materials
 - Acoustic Performance
 - Addition of carbon dioxide sensors to classrooms
 - New air handling unit with enhanced air filters
- Innovation points through education

D. CONCEPTUAL COST ESTIMATE

The following cost estimate was prepared by Rider Levett Bucknall based on information provided in the Health Program Integration Renovation Program Plan, overall building program, site concept plans and allowances. Costs are presented in a unit cost format and based on market information and comparable projects within the State. A summary budget is included below. Assumptions are noted on the State Capital Construction request form.

<i>The total cost includes the following:</i>	
Professional Services and Fees.....	\$1,180,000
Construction (Building and Site Development).....	\$8,270,093
Equipment and Furnishings.....	\$800,000
Art in Public Places (1% of Construction).....	\$75,000
Project Contingency.....	\$827,000
<hr/>	
TOTAL BUDGET REQUEST	\$11,152,093

**Cost estimate details have been included in the Appendix.*

E. PROPOSED SCHEDULE

2018:	Health Programs Integration Renovation: Annex Building Program Plan Approval
Spring Summer 2018:	Capital Construction Request, ACC Foundation Capital Campaign begins
Fall 2019:	Requests for Proposals for Design Team for Health Programs Integration Renovation Issued
2020:	Construction Start
2021:	Occupancy

F. FUNDING SOURCES

Funding for the Health Programs Integration Renovation will be through a combination of sources including: Capital Construction, Cash and Arapahoe Community College Foundation Funding. Cash and Foundation Funding will supplement the Capital Construction request. Littleton’s Main and Church Avenue Buildings will require renovations due to the relocation of programs as a means to provide adequate space for the Health Programs. These proposed renovations referenced in the Facilities Master Plan and Section iii “Implementation + Design Criteria” of this document will be internally funded from ACC’s cash funds. Cash funding has and will continue to be used for work in the Annex including in part: repair of concrete walls and upgrades to lighting. In addition to these resources, Arapahoe Community College Foundation will initiate a capital campaign. The goals and stated outcome of the Foundation: “to provide opportunities for individuals to improve their lives through education” and “to directly impact the economic development of our community by providing an educated workforce” align with the objectives of the Program Plan.

REFERENCES

- 2016 Fall Census Data Book, Institutional Research. Littleton: Arapahoe Community College, 2016.
- 2016 Summer Census Data Book, Institutional Research. Littleton: Arapahoe Community College, 2016.
- Arapahoe Community College Facilities Master Plan. Denver: Paulien and Associates, Nov. 2010.
- Arapahoe Community College, Learning Commons Program Plan. Denver: Paulien and Associates, Oct. 2013. Print.
- A Matter of Degrees: Practices to Pathways (High-impact practices for community college student success). Austin, TX: The University of Texas at Austin, Program in Higher Education Leadership.
- Bridges, D. R., Davidson, R. A., Odegard, P. S., Maki, I. V., & Tomkowiak, J. (2011). Interprofessional collaboration: three best practice models of interprofessional education. *Medical Education Online*, 16. Retrieved from <http://doi.org/10.3402/meo.v16i0.6035>
- Cha, A.E (2016, May 3). Researchers: Medical errors now third leading cause of death in United States. *The Washington Post*. Retrieved from https://www.washingtonpost.com/news/to-your-health/wp/2016/05/03/researchers-medical-errors-now-third-leading-cause-of-death-in-united-states/?utm_term=.ca1df106da2e
- Chown, G., Mader, S., Eisenhauer, R., Lichtenwalner, J. & Batz, S. (2015). Interprofessional Education: Using Live Simulation to Enhance Collaboration and Communication. *Health and Interprofessional Practice*. 2(3):eP1089
- Colorado Department of Higher Education Space Utilization Planning Guidelines, April 5, 2007.
- Facility Audit, Arapahoe Community College Littleton Campus. Denver: Stephen Hall Architects, 2016. Print.
- Gaba, David M. MD, 2007, The Future Vision of Simulation in Healthcare, *Simulation in Healthcare*, July 2007, volume 2, issue 2 p 126-135
- Institute of Medicine. (2003). *Health Professions Education: A bridge to Quality*. Washington, DC: National Academic Press. Retrieved from <https://www.nap.edu/read/10681/chapter/1#xvi>
- Ivanitskaya, K., Clark, D., Montgomery, G., Primeau, R. (2002, 12). Interdisciplinary Learning: Process and Outcomes. *Innovative Higher Education*, 27(2), 95-111
- James J. T. (2013, 09). A New, Evidence-Based Estimate of Patient Hams Associated with Hospital Care. *Journal of Patient Safety*, 9(3), 122-128
- McClenney, Marti K., C. N. and C. Adkins. Student Engagement and Student Outcomes: Key Findings from CCSSE Validation Research. Rep. CCSSE, 2007. Web. P. 1-6. Dec. 2016.
- McKenna KD, Carhart E, Bercher D, Spain AE, Todaro J, Freel J. Interprofessional Simulation in Accredited Paramedic Programs. *The Internet Journal of Allied Health Sciences and Practice*. 2016 Apr 06;14(2), Article 6.
- McGaghie, W. C., Issenberg, S. B., Cohen, E. R., Barsuk, J. H., & Wayne, D. B. (2011). Does Simulation-based Medical Education with Deliberate Practice Yield Better Results than Traditional Clinical Education? A Meta-Analytic Comparative Review of the Evidence. *Academic Medicine : Journal of the Association of American Medical Colleges*, 86(6), 706–711.
- "Potential Future Colorado Community College Enrollment" by Colorado Community College Service Areas.
- Salas E, Rosen MA, Building high reliability teams: progress and some reflections on teamwork training *BMJ Qual Saf* 2013;22:369-373.
- Strategic Vision 2020, Working as One for a Greater ACC. Littleton: Arapahoe Community College, n.d.
- "The Colorado Talent Pipeline Report." The Colorado Talent Pipeline Report. Colorado Workforce Development Council. Web. Dec. 2016.
- Watson, K., Wright, A., Morris, N., McMeeken, J., Rivett, D., Blackstock, F., Jones, A., Haines, T., O'Connor, V., Watson, G., Peterson, R. and Jull, G. (2012), Can simulation replace part of clinical time? Two parallel randomised controlled trials. *Medical Education*, 46: 657–667. doi:10.1111/j.1365-2923.2012.04295.x

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