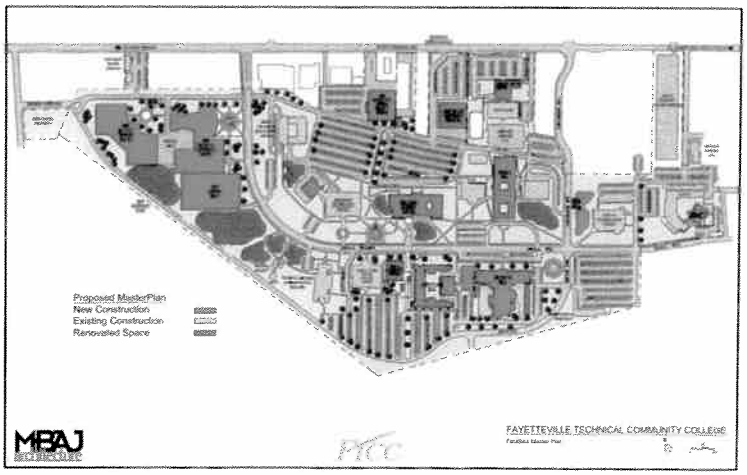
FTCC

Fayetteville Technical Community College



FACILITIES MASTER PLAN

June 16, 2008

MBAJ architecture

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

In March 2008, Fayetteville Technical Community College [FTCC] contracted with MBAJ Architecture to update their facilities utilization study and campus master plan. MBAJ Architecture has significant experience in facilities planning for higher education.

The goals of this study were to verify use of current campus facilities; determine and quantify needs for additional space; determine a plan for best use of current facilities; determine needs for future space; and create a campus master plan for facilities development. All of these goals have been accomplished and are addressed in this report.

Process

The FTCC administrative team was oriented to the study update during a session conducted on the FTCC campus by John Thomas of MBAJ Architecture. Prior to development of the Facility Master Plan, the College developed a Long Range Plan based upon the 2007 requirements of the North Carolina Community College System Office (NCCCS). A component of the Long Range Plan focused upon 2007 – 2013 enrollment and demographic projections for the college, and population projections by age group for the college service area. The analysis and methodology for these projections can be found in the College's Long Range Plan. This data was used to create a ratio that links enrollment growth to campus space in projecting future space needs.

Following this orientation, MBAJ examined FTCC's Long Range Plan (LRP) to understand the current enrollment trends and the updated internal and external program needs of the college. Through a series of sessions held in March and April 2008, MBAJ worked with the administrative team to update their current needs list for each campus and develop the space requirements necessary to implement the Key Implications of the LRP in the Facility Master Plan. A Summary of the current needs identified is contained in the section of this report titled *Program of Current Space Needs*.

MBAJ Architecture completed the drawings of campus facilities and prepared spreadsheets that show current square footage, as well as deficiencies in square footage, for each area of the college. With all facility data in hand, the consultants began the task of developing recommendations for meeting current and projected space needs.

METHODOLOGY OF STUDY

METHODOLOGY OF THE STUDY

Standard practice is that an architectural facilities study will produce the primary elements of a master plan for facilities development, a plan for best use of current facilities, and a determination of needs for future space. The MBAJ Architecture facilities study directly correlates to the College's Long Range Plan to provide a comprehensive plan that assesses the demand for programs and for services that will be offered in college facilities.

A college is wise to embark on a facilities planning process for a variety of reasons, not the least of which is the growing scarcity of funds for constructing new facilities. There is growing accountability from the various publics for most efficient use of current facilities. Additionally, distance learning and other non-traditional forms of instruction are altering the way colleges and universities deliver their products, which in turn, have impact on space usage. Constant updates and redesign of community college offerings, as well as the mandate for regional offerings, are other factors that affect facilities usage. Finally, the Southern Association of Colleges and Schools (SACS) require that each accredited institution include facilities planning as a part of its institutional effectiveness process.

Through a completely interactive process that provides opportunity for involvement by faculty and staff, the MBAJ Architecture facilities study is conducted in three components. The first component is an assessment of the Long Range Plan that takes into account current and anticipated needs of every offering at the college as well as the demographics and anticipated growth projections from 2007 - 2013. The second component is identification and assessment of the current use of facilities and final component is the development of a campus master plan to meet the current needs of the college and the needs outlined in the key implications of the FTCC Long Range Plan.

MBAJ Architecture used several approaches to data gathering for the FTCC study. One focus of data gathering included an assessment of the current use of program spaces on campus. During discussions, the consultants clarified the use by each department/ division of current space. For the purposes of the study, use of a space 75 percent of the time or more assigns ownership of that space to a particular purpose or group. Ideally, there is far more shared space than "owned" space.

In addition, MBAJ identified the projected enrollment growth from the Long Range Plan and overlaid this data with the current space usage and current space needs to assess how much space should be needed to support the projected enrollment numbers. By working with the college to identify current and future program space impacts on campus, MBAJ was able to validate the overall space projections.

LONG RANGE PLAN

LONG RANGE PLAN (LRP) SUMMARY

FTCC is one of the largest of the 58 colleges in the NC Community College System and enrolls nearly 38,000 students per year in curriculum and continuing education offerings. Established in 1961, the college serves Cumberland County, an area unique to the state with its large population of military personnel and their families.

Equally unique is the impact on the area of military base changes nationwide. Military personnel and the military-related population will expand here by as many as 40,000 persons over the next four to five years as BRAC (Base Realignment and Closure) shifts military personnel, jobs and companies to the Fayetteville/Cumberland County area.

As identified in the Fayetteville Technical Community College's [FTCC] Long Range Plan, the college should anticipate a 11.5% growth in Curriculum FTE, a 12.8% increase in Basic Skills FTE and a 12.9% increase in Occupational Extension over the next five years. Enrollment increases and new program offerings will place greater space needs on the college's two existing campuses and satellite centers which are already pushed to capacity.

FTCC has identified Key Implications for the future enrollment projections and program offerings over the next five years. Those implications identify the need for additional satellite campuses to serve high growth areas and growth in existing programs including Health Technologies, Trade Specific Vocational / Skills Training, Technology and Simulation / Gaming.

The Key Implications of the Long Range Plan implications are the basis of the Facility Master Plan. FTCC's top three Capital Priorities greatly enhance the college's ability to address the Key Implications and provide critical space for program growth. The priority projects include space for all of the programs identified above and general classrooms for both Curriculum and Continuing Education programs.

PROGRAM OF CURRENT SPACE NEEDS

PROGRAM OF CURRENT SPACE NEEDS

MAIN CAMPUS (FAYETTEVILLE)

Curriculum Programs

BUILDING TRADES

No current needs were identified for this area.

BUSINESS PROGRAMS

No current needs were identified for this area.

COMMERCIAL ARTS TECHNOLOGY PROGRAMS

Painting/Watercolor Studio	For Fine Arts (new) 800 Sq Ft

TOTAL COMMERCIAL ARTS TECHNOLOGY SPACE NEED: 800 SQ FT

CULINARY TECHNOLOGY

No current needs were identified for this area.

EARLY CHILDHOOD EDUCATION

No current needs were identified for this area.

ENGINEERING TECHNOLOGY

No current needs were identified for this area.

FUNERAL SERVICE EDUCATION

No current needs were identified for this area.

GENERAL STUDIES

Registration/Advisement Center	1-Stop Center for Student Advisement with up to 20 kiosks 3,400 Sq Ft
Faculty Office	12 @ 100 Sq Ft = 1,200 Sq Ft
Classroom	21 @ 720 Sq Ft = 15,120
Classroom	3 @ 640 Sq Ft = 1,920
Computer Lab	7 @ 900 Sq Ft = 6,300
Latent Evidence Lab	2 @ 720 Sq Ft = 1,440
Combined Classroom	1 @ 1,300 Sq Ft = 1,300
Conference Room	1 @ 300 Sq Ft = 300
Storage	980 Sq Ft

TOTAL GENERAL STUDIES SPACE NEED: 31,960 NET SQ FT

HEALTH PROGRAMS

Surgical Technology Classroom	1,000 Sq Ft
Dental Hygiene Radiography	1,300 Sq Ft
Dental Assisting Basic Lab	2 @ 600 Sq Ft = 1,200 Sq Ft
Dental Assisting Advanced Lab	1,300 Sq Ft
Dental Assisting Classroom	1,000 Sq Ft
Equipment Storage	400 Sq Ft
Sterilization Room	700 Sq Ft
Faculty Offices	4 @ 100 Sq Ft = 400 Sq Ft

TOTAL HEALTH PROGRAM AREA SPACE NEED: 7,300 NET SQ FT

HORTICULTURAL TECHNOLOGY

No current needs were identified for this area.

INDUSTRIAL TECHNOLOGY

No current needs were identified for this area.

LABORATORY SCIENCE PROGRAMS

Physics	1,000 Sq Ft
Storage and Prep space	400 Sq Ft
Biology	3 @ 1,200 Sq Ft = 3,600 Sq Ft
Bio-Tech	1,200 Sq Ft
Storage and Prep space	2 @ 400 Sq Ft = 800 Sq Ft
Faculty Offices	10 @ 100 Sq Ft = 1,000 Sq Ft
Classrooms	2 @ 600 Sq Ft = 1,600 Sq Ft

TOTAL LABORATORY SCIENCE PROGRAMS SPACE NEED: 9,600 NET SQ FT

TRANSPORTATION TECHNOLOGY PROGRAMS

Automotive Lab	6 @ 350 Sq Ft = 2,100 Sq Ft
Heavy Truck Lab	2 @ 350 Sq Ft = 700 Sq Ft
Office	4@ 100 Sq Ft = 400 Sq Ft
Classroom	2 @ 600 Sq Ft = 1,200 Sq Ft
Storage	2 @ 200 Sq Ft = 400 Sq Ft
Preparation Room	1,000 Sq Ft

Testing Room	400 Sq Ft

TOTAL TRANSPORTATION TECHNOLOGY PROGRAM AREA SPACE NEED: 6,200 NET SQ FT

MILITARY BUSINESS

No current needs were identified for this area.

DEVELOPMENTAL STUDIES

Classroom	4 @ 600 Sq Ft = 2,400 Sq Ft

TOTAL DEVELOPMENTAL STUDIES PROGRAM AREA SPACE NEED: 2,400 NET SQ FT

Continuing Education

Basic Skills

No current needs were identified for this area.

General Services

Classroom	6 @ 600 Sq Ft = 3,600 Sq Ft
Masonry Lab	1600 Sq Ft
Tool Storage	100 Sq Ft
Carpentry Lab	1600 Sq Ft
Material Storage	500 Sq Ft
Drywall Lab	600 Sq Ft
Welding Lab	1,200 Sq Ft
HVAC Lab	1,600 Sq Ft

Total General Services Program Area Space Need: 10,800 Net Sq Ft

Administration

Administrative Services

Management Information Systems

Storage	450 Sq Ft
5-person Workspace	250 Sq Ft
Switch Room/Office	150 Sq Ft

Print Shop

No current needs were identified for this area.

Plant Operations

Lobby	400 Sq Ft
Conference Room	250 Sq Ft
Training Room	1,250 Sq Ft
Mail Room	500 Sq Ft
Plan Room	500 Sq Ft
Inventory	3,000 Sq Ft

Building Maintenance

Shops	700 Sq Ft
Vehicle service	800 Sq Ft
Storage	1,800 Sq Ft
Office	300 Sq Ft

Security

Operations	350 Sq Ft
Offices	3 @ 150 Sq Ft = 450 Sq Ft
Storage Rooms	2 @ 160 Sq Ft = 300 Sq Ft
Video Surveillance	200 Sq Ft
Interview Room	2 @ 80 Sq Ft = 160 Sq Ft
Conference Room	300 Sq Ft
Locker Rooms	1,550 Sq Ft

Institutional Effectiveness & Research

Office	2 @ 100 Sq Ft = 200 Sq Ft
Archive Storage (climate control)	200 Sq Ft
Workroom	200 Sq Ft

TOTAL ADMINISTRATIVE SERVICES SPACE NEED: 14,260 NET SQ FT

FINANCIAL SERVICES

Cafeteria

No current needs were identified for this area.

Bookstore

Additional Floor Space/Display Area	3,700 Sq Ft
Additional Storage Space	800 Sq Ft
Larger Receiving Area	200 Sq Ft
Covered Loading Dock	100 Sq Ft
4-Person Work Space	250 Sq Ft

Warehouse/Shipping & Receiving

Supply Room	300 Sq Ft
Storage Area	4,000 Sq Ft

Property Control

Short-term storage area for reusable furniture	Housing for desks, computers, some surplus property 1,000 Sq Ft

TOTAL FINANCIAL SERVICES SPACE NEED: 10,350 NET SQ FT

STUDENT SERVICES

In terms of proximity, it is desirable that all areas of this division operate in close proximity. A particular need at this point is additional staff workspace and storage for marketing materials, vault space, and secure record storage.

Admissions

Secure Record Space	200 Sq Ft
Office Space	for Testing 100 Sq Ft
Storage Space	200 Sq Ft
Private Room For Special Needs Testing	Small room for 2-4 persons 150 Sq Ft
Storage	for applications, catalogs, other publications 1,500 Sq Ft
Office Space	for Admissions 4 @ 150 Sq Ft = 600 Sq Ft
Testing Room	secured, with limited access; near existing Testing Room; 800 Sq Ft

Counseling

Larger Office for Special Populations	100 Sq Ft
Larger counter/seating area at Student Center Information Desk	3x size of current space; 1,000 Sq Ft
Rooms for group counseling	2, accommodate 10-12 students 2 @ 250 Sq Ft = 500 Sq Ft
Workspace/Storage Space	For Special Populations Office 200 Sq Ft
Storage for program brochures	500 Sq Ft

Financial Aid

Space for records and files	Secured area: 200 Sq Ft
Open Office	800 Sq Ft

Health Services/Student Activities

No current needs were identified for this area.

Job Placement

No current needs were identified for this area.

Student Support

Student Lounge	1,200 Sq Ft

Registration

Vault	300 Sq Ft
Office	100 Sq Ft
Open office space	600 Sq Ft

TOTAL STUDENT SERVICES SPACE NEED: 9,050 Net Sq Ft

PRESIDENT'S OFFICE

An addition currently under design will meet the needs for this division.

Learning Resources

No current needs were identified at this time.

Institutional Advancement

An addition currently under design will meet the needs for this division.

SUMMARY OF CURRENT SPACE NEEDS

SPRING LAKE CAMPUS

LAW ENFORCEMENT/CRIMINAL JUSTICE PROGRAMS

Faculty Office	6 @ 100 Sq Ft = 600 Sq Ft
Fitness Center	800 Sq Ft
BLET Storage (Vault for Armory)	600 Sq Ft

TOTAL LAW ENFORCEMENT/CRIM. JUSTICE PROGRAMS SPACE NEED: 2,000 NET SQ FT

STUDENT SERVICES

Student Support

Student Lounge	1,200 Sq Ft

TOTAL STUDENT SERVICES SPACE NEED: 1,200 Net Sq Ft

GENERAL ASSESSMENTS

GENERAL ASSESSMENTS

1. Most space deficits are based upon current needs and future program offerings. New spaces should be designed with flexibility in mind so that shop/lab spaces can be utilized by more than one program if possible.
2. Relocate related offices and department/division support spaces adjacent to, or near one another for most efficient use of space.
3. Provide for adequate equipment and use of space. Renovate classrooms and labs to facilitate up-to-date teaching and technology so that any program can use a general classroom. All new spaces should include up-to-date technology.
4. Provide adequate storage adjacent to lab or multipurpose spaces so that multiple programs can utilize the same space and move specialized equipment in and out of adjacent storage rooms.

ANALYSIS OF SPACE

ANALYSIS OF SPACE INCLUDING CURRENT AND PROJECTED NEEDS

The Existing Space Assignments by Building and Current Space Assessments with Future Projections for Fayetteville Technical Community College can be found in Appendix A and Appendix C, respectively. The projected space need for each department/division and program is directly proportional to the demographic projections for the service area. The current space need (actual space used plus needed space) was multiplied by a growth factor for the year 2013. This growth factor is the ratio of projected enrollment increases identified in the college's Long Range Plan based on Fall 2007 enrollment by program.

Meeting the current and future space needs will require phasing of projects. Located in Appendix C are charts labeled Current Space Assessment with Future Projections that depict the current space need versus the projected space need for the campus.

The projected enrollment growth presents the college with the challenge of meeting the current space need and planning for future space needs, while continuing to educate students in the existing facilities. In addition to shifting programs from one facility to another, the college will need to find new space for departments/divisions that do not have sufficient space for growth in their current location. Additionally, the college must consider the way in which education will be delivered in the future and how technology and education trends will affect future development of space. Recent trends have suggested that future space might have more to do with the design and flexibility than the quantity of space.

RECOMMENDATION ANALYSIS

RECOMMENDATION ANALYSIS

Master Plan Scenario

Referenced Documents:

- Program of Current Space Needs
- Appendix A: Current Site Plan and Existing Space Assignments by Building
- Appendix C: Current Space Assessments with Future Projections
- Appendix D: Proposed Phased Master Plans

Introduction

Currently, Fayetteville Technical Community College devotes 599,483 square feet of assignable space to program and/or service functions. The Current Space Assessment spreadsheets contained in Appendix C indicate an additional need of 112,520 assignable square feet to meet current program and service demands. In five years, given the projected growth rate for the College's service area, the college-wide FTE enrollment is projected to increase by 11.5 percent in Curriculum, 12.8 percent in Basic Skills, and 12.9 percent in OCC. This enrollment growth will increase the amount of additional space needed by FTCC to a total of 195,537 assignable square feet. These projections assume that the college adds no new programs or services to its present offerings. Naturally, the square footage requirements and project priorities would be altered if the college chooses to offer new programs or services, particularly without eliminating others.

It is important to note that the assignable projected space deficits for the year 2013 are net amounts that represent only assignable program or service space. Thus, they do not include any area required by code for building support features such as restrooms, mechanical and electrical systems, corridors, and walls. The Gross Space Assessment Summary Table (Appendix C) uses a common factor of forty percent (40%) to arrive at a total gross square footage need. The college's gross space deficit for the year 2013 is projected to be 273,752 square feet.

The following pages contain the recommended approach that Fayetteville Technical Community College should consider when trying to meet the projected five year space deficit at each campus. The recommendations propose not only new facilities but also renovations and additions to the college's existing facilities. The relocation of existing programs or services to different locations on campus in addition to new construction will help the college meet its long-range space needs.

All construction will create a "domino effect," which requires that certain changes must occur first before additional events can take place. It is important to note that new buildings (not additions) could be less difficult to phase and more economical to build since new construction could be consolidated to a few areas and not spread throughout the campus, as would be the case with additions and renovations to existing buildings. Also, with funding and political uncertainties, the actual timing of this scenario could vary greatly.

Fayetteville Technical Community College has taken great care in creating a beautiful and pedestrian-friendly campus. Any additions and new construction must fit within the existing campus context, so as not to interfere with the existing character. The following pages represent an architectural master plan that would take a number of years to fully implement. This master plan becomes a working document that should be updated as the college experiences new growth in population and begins to offer new programs.

PROPOSED SPACE ORGANIZATION

PROPOSED SPACE ORGANIZATION TO MEET PROJECTED NEEDS

PHASE I (CAPITAL PRIOIRTY #1)

New Satellite Campus
Health Technologies Center Renovation

Phase I of the proposed FTCC master plan includes a new **Satellite Campus**, and renovations to the **Health Technologies Center** on the Fayetteville Campus.

Fayetteville Technical Community College will experience significant growth over the next four to five years as BRAC (Base Realignment and Closure) shifts military personnel, jobs and companies to the Fayetteville/Cumberland County area. The resulting requirements for new space to meet this demand cannot be completely accommodated within the limited undeveloped land remaining on the colleges existing campuses. The college has identified the several areas of the county as potential locations for such a satellite campus. A new Satellite Campus in will allow FTCC to meet several needs identified in the Long Range Plan including expansion of its Health Technology programs and additional Curriculum and Continuing Education classroom and lab space.

The construction of a new satellite campus will allow some Health Technology programs to be relocated in whole or in part from the Fayetteville Campus. Relocation of these programs will allow FTCC to expand some existing health programs and bring others into accreditation compliance within the existing Health Technologies Center on the Fayetteville Campus.

NEW SATELLITE CAMPUS BUILDING

- Relocate Health Technology programs from the existing Health Technologies Center.
- Provide Dental lab(s), Classroom, Program Support spaces, and storage.
- Provide Nursing Lab(s) Program Support spaces, and storage
- Provide (3) Immersion Environment labs and storage.
- Provide a 250 seat Lecture Hall.

- Provide (20) 30-seat Classrooms in a "Classroom of the Future" configuration.
- Provide a Biology Lab, prep space and storage.
- Provide a Chemistry Lab, prep space and storage.
- Provide (12) General Computer Labs.
- Provide a Student Lounge.
- Provide a Library.
- Provide a Bookstore
- Provide a Multi-purpose Room
- Provide an Office Suite with campus administration, students services, faculty offices, adjunct faculty space, conference room, and support.
- Provide new utility services for water, sewer and fire protection.
- Provide new sidewalks, entrance plazas, vehicular access to the building and landscaping.

HEALTH TECHNOLOGIES CENTER RENOVATION

- Relocate Health Technology programs to the new Satellite Campus.
- Renovate the vacated space to expand the Surgical Technology program to meet the current and future space needs.
- Renovate the vacated space to expand the Nursing programs to meet the current and future space needs.
- Renovate the vacated space to expand the Dental programs to meet the current program accreditation space needs.

PHASE I SPACE SUMMARY

NEW SPACE PROVIDED: **75,000 square feet (gross)**

RENOVATED AREA: **8,100 square feet (gross)**

PHASE II (CAPITAL PRIORITY #2)

Former Service Merchandise Building Renovation
Tony Rand Student Center Renovation
Thompson Library Renovation
Criminal Justice Center Renovation

Phase II of the proposed FTCC Master Plan includes renovation of the former **Service Merchandise Building** recently purchased by the college and renovations to the **Tony Rand Student Center, Thompson Library** and the **Criminal Justice Center**.

The growth of FTCC's student population and program offerings has resulted in the construction of several new buildings. These new facilities have addressed the pressing classroom and lab needs of the college, but have not addressed the growing student services and student support needs of the college. FTCC has purchased a former **Service Merchandise Building** on Fort Bragg Rd contiguous to the Fayetteville Campus property. This building will be renovated to accommodate the Campus Bookstore and Campus Security. The building will also be home to the college's Criminal Justice programs and provide expansion space for the college's digital media programs. The design of the renovation for this property is currently funded and is underway. The space vacated by these programs in the **Tony Rand Student Center, Horace Sisk Building, Thompson Library** and the **Criminal Justice Center** will allow for the required expansion of Student Services; Faculty Support; Campus Call Center and Campus Recruiter areas.

FORMER SERVICE MERCHANDISE BUILDING

- Relocate the Campus Bookstore from the Tony Rand Student Center.
- Relocate Campus Security from the Tony Rand Student Center.
- Relocate the Campus Call Center from the Horace Sisk Building.
- Relocate the Campus Recruiters from the Thompson Library.
- Relocate the Criminal Justice program space from the Criminal Justice Center
- Provide (7) general use 25-station computer lab.
- Provide a 70-seat Classroom
- Provide (1) Latent Evidence Labs
- Provide (3) 30-seat Classrooms.
- Provide (21) 40-seat Classrooms.
- Provide an Office Suite with faculty offices, adjunct faculty space, conference room, and support.
- Provide 150 additional parking spaces to meet the requirements for this building.
- Provide new sidewalks, entrance plazas, vehicular access to the building and landscaping.

TONY RAND STUDENT CENTER RENOVATION

- Relocate the Campus Bookstore and Campus Security Center to the Service Merchandise Building.
- Renovate the vacated space to expand Financial Aid, Admissions, Counseling, Registration and Enrollment Support Services.
- Upgrade building wide plumbing, mechanical and electrical building systems

THOMPSON LIBRARY RENOVATION

- Relocate the Campus Recruiters to the Tony Rand Student Center.
- Reassign the vacated space to Faculty Offices.
- Replace existing roof system.

THOMPSON LIBRARY RENOVATION

- Relocate the Campus Call Center to the Tony Rand Student Center.
- Reassign the vacated space to Faculty Offices.

PHASE III (CAPITAL PRIORITY #3)

New Industry Training Center
Cumberland Hall Renovation
Advanced Technology Center Renovation
Center for Business & Industry Renovation
Neill Currie Building Renovation
Lafayette Hall Renovation

Phase III of the proposed FTCC Master Plan includes a new **Industry Training Center** and **renovations** to **Cumberland Hall, Advanced Technology Center, Center for Business & Industry, Neill Currie Building and Lafayette Hall** for Curriculum and Continuing Education program classrooms, labs, and support spaces.

The large influx of personnel to Cumberland County associated with Base Realignment and Closure (BRAC) will bring with them new industry and an increased demand for housing. As a result of these issues, the FTCC Long Range Plan anticipated significant growth in vocational and Trade-specific training over the next five years. In particular construction related program offerings need to be enhanced and expanded to meet this anticipated demand.

Construction of a new **Industry Training Center** will allow the college to consolidate and expand Trade-Specific Vocational Curriculum and Continuing Education Programs. The center will be home to a new Building Construction Center to consolidate and expand construction related programs, a new Transportation Center to consolidate and expand vehicle repair programs, and classrooms and labs to support Continuing Education programs. Construction of the Center will require On-Campus and Off Campus road improvements to provide better entrance to the campus, improve on-campus vehicular circulation, meet the requirements of the City of Fayetteville and the requirements of the North Carolina Department of Transportation.

Cumberland Hall will be renovated to provide new Fine Arts labs and general classrooms in the space vacated by the Building Trades program.

The **Advanced Technology Center** will be renovated to provide expanded space for the Campus Facility Operations Center in the space vacated by the Automotive program.

The **Center for Business & Industry** will be renovated to consolidate the College's Continuing Education Administration and Registration functions, provide new Customized Training Labs for local industry and new Continuing Education Classrooms / Labs in the space vacated by the Small Business Center and Construction Training Programs.

The **Neill Currie Building** will be renovated to provide on-campus space for the Military Business Center, the relocated Small Business Center, and a new Small Business Incubator in the space vacated by the Continuing Education Administration.

Lafayette Hall will be renovated to provide Faculty Offices and Campus Storage in the space vacated by the Campus Facility Operations.

NEW INDUSTRY TRAINING CENTER

- Relocate the Building Trades programs from Cumberland Hall.
- Relocate the Construction Training Programs from the Center for Business & Industry.
- Relocate and expand the Automotive & Heavy Truck Programs from the Advanced Technology Center.
- Provide Auto Body Lab(s).
- Provide (8) 30-seat Classrooms in a "Classroom of the Future" configuration.
- Provide (6) General Computer Labs.
- Provide (2) 100-seat Lecture Halls.
- Provide an Immersion Environment Lab and storage.
- Provide an office suite with faculty offices, adjunct faculty space, conference room, and support.
- Provide new utility services for water, sewer and fire protection.
- Provide new sidewalks, entrance plazas, vehicular access to the building and landscaping.

CUMBERLAND HALL RENOVATION

- Relocate Building Trades programs to new Industry Training Center
- Provide Fine Arts Painting & Sculpture Lab(s)
- Provide (2) 40-seat Classrooms
- Provide (4) 30-seat Classrooms
- Upgrade building wide plumbing, mechanical and electrical building systems

ADVANCED TECHNOLOGY CENTER RENOVATION

- Relocate Automotive Repair and Heavy Truck Repair programs to new Industry Training Center.
- Relocate Campus Facility Operations Center from Lafayette Hall
- Replace Emergency Generator.

CENTER FOR BUSINESS & INDUSTRY RENOVATION

- Relocate Continuing Education Construction Training programs to new Industry Training Center.
- Relocate Continuing Education Industry Training programs to new Industry Training Center.
- Relocate Small Business Center from the Center for Business & Industry to Neill Currie Building.
- Relocate Continuing Education Administration and Registration from Neill Currie Building to Center for Business & Industry.
- Provide Customized Training Lab(s) for local industry.
- Provide Continuing Education Classroom(s) & Lab(s).

NEILL CURRIE BUILDING RENOVATION

- Relocate Continuing Education Administration and Registration to Center for Business & Industry.
- Relocate Military Business Center from Barges Tavern off-campus to Neill Currie Center.
- Relocate Small Business Center from Center for Business & Industry to Neill Currie Center.
- Provide Small Business Incubator.

LAFAYETTE HALL RENOVATION

- Relocate Campus Facility Operations to the Advanced Technology Center.
- Provide Faculty Offices
- Provide Campus Storage

PHASE III SUMMARY

NEW SPACE PROVIDED:	**118,000 square feet (gross)**
RENOVATED AREA:	**67,900 square feet (gross)**
PM&E SYSTEMS UPGRADES:	**78,000 square feet (gross)**

PHASE IV

Lafayette Hall Addition and Renovation

Phase IV of the proposed FTCC master plan includes additions and renovations to **Lafayette Hall.**

The growth of curriculum programs will put additional pressure on existing science lab facilities. This need will be alleviated through the construction of a science addition to Lafayette Hall and renovation of the existing chemistry labs and creation of a new physics lab in the existing facility.

LAFAYETTE HALL ADDITION

- Provide (3) Biology Labs
- Provide a Bio-Technology Lab.
- Provide Faculty Support spaces

LAFAYETTE HALL RENOVATION

- Upgrade (2) Existing Chemistry Labs
- Provide Physics Lab
- Upgrade building wide plumbing, mechanical and electrical building systems

PHASE IV SUMMARY

NEW SPACE PROVIDED:	**13,000 square feet (gross)**
RENOVATED AREA:	**5,000 square feet (gross)**
PM&E SYSTEMS UPGRADES:	**59,000 square feet (gross)**

PHASE V

New Fine Arts / Conference Center
New Parking Deck

Phase V of the proposed FTCC campus master plan includes construction of a new **Fine Arts / Conference Center** and a **Campus Parking Deck**.

The construction of a new Fine Arts / Conference Center will provide FTCC with expanded capabilities to host large events on campus to benefit students and expand the colleges presence in the community. The center will include a 1,500 seat auditorium, expo space, multi-purpose rooms and convention support areas.

Parking is an on-going concern at FTCC. The construction of the new Fine Arts Center will require the construction of significant additional parking that cannot be accommodated using ground lots without the purchase of additional property. The construction of a parking deck will allow FTCC to maximize the available land and help limit the impervious footprint of the college.

NEW FINE ARTS / CONFERENCE CENTER

- Provide a 1,500 seat Auditorium with working stage and performance support spaces.
- Provide a 300 seat black box theater.
- Provide (6) Fine Arts Labs
- Provide an art gallery for student display and traveling shows
- Provide a Conference Expo Center
- Provide (4) Multi-Purpose Rooms
- Provide (6) Conference Rooms for breakout programs
- Provide a Catering Kitchen

Parking Deck

- Provide a parking deck for up to 400 spaces

PHASE V SUMMARY

NEW SPACE PROVIDED: 110,000 square feet (gross)

PHASE VI

New Campus Boundary Road

The anticipated growth of programs and student enrollment at FTCC will bring many opportunities and many challenges. Accommodating the movement of vehicles on to campus and exiting campus is currently a significant issue that will become increasingly problematic as the campus grows. The construction of a Boundary Road on the west side of campus will alleviate some of the internal circulation issues and provide an additional point of campus entry.

SPACE ASSESSMENT SUMMARY

SPACE ASSESSMENT SUMMARY

Summary of College-Wide Space Deficit:

Current Space Deficit:	**157,528**	**gross square feet**
Year 2013 Space Deficit:	**273,752**	**gross square feet**

Summary of New Space Recommended:

Phase I (CP#1)	
New Satellite Campus	75,000 gross square feet
Phase II (CP #2)	
Former Service Merchandise Building	70,000 gross square feet
Phase III (CP#3)	
New Industry Training Center	118,000 gross square feet
Phase IV	
Lafayette Hall Addition & Renovation	13,000 gross square feet
Phase V	
New Fine Arts / Conference Center	109,000 gross square feet
Phase VI	
Campus Boundary Road	0 gross square feet
Total New Space Provided	**385,000 gross square feet** (276,000 gsf linked to LRP deficit)

ADDITIONAL RECOMMENDATIONS

ADDITIONAL RECOMMENDATIONS

1. **Additional Property:** FTCC is a vital part of the community and will continue to grow in enrollment and programs over time. The Fayetteville Campus has limited undeveloped space for the construction of new facilities. The college should continue to identify and purchase adjacent properties to rehabilitate for college use or demolish for new construction projects.

2. **Campus Entry:** A focal point is needed to draw attention to the main entrance to the campus on Fort Bragg Road. Aside from letting the public know "where" FTCC is, such a focus would provide ongoing awareness for those traveling this busy boulevard.

3. **Access Road:** The majority of car traffic entering FTCC's campus arrives from the south creating a large concentration of vehicles at one point of entry. The College should consider development of a second access road extending to Morganton Road on the southeast end of campus.

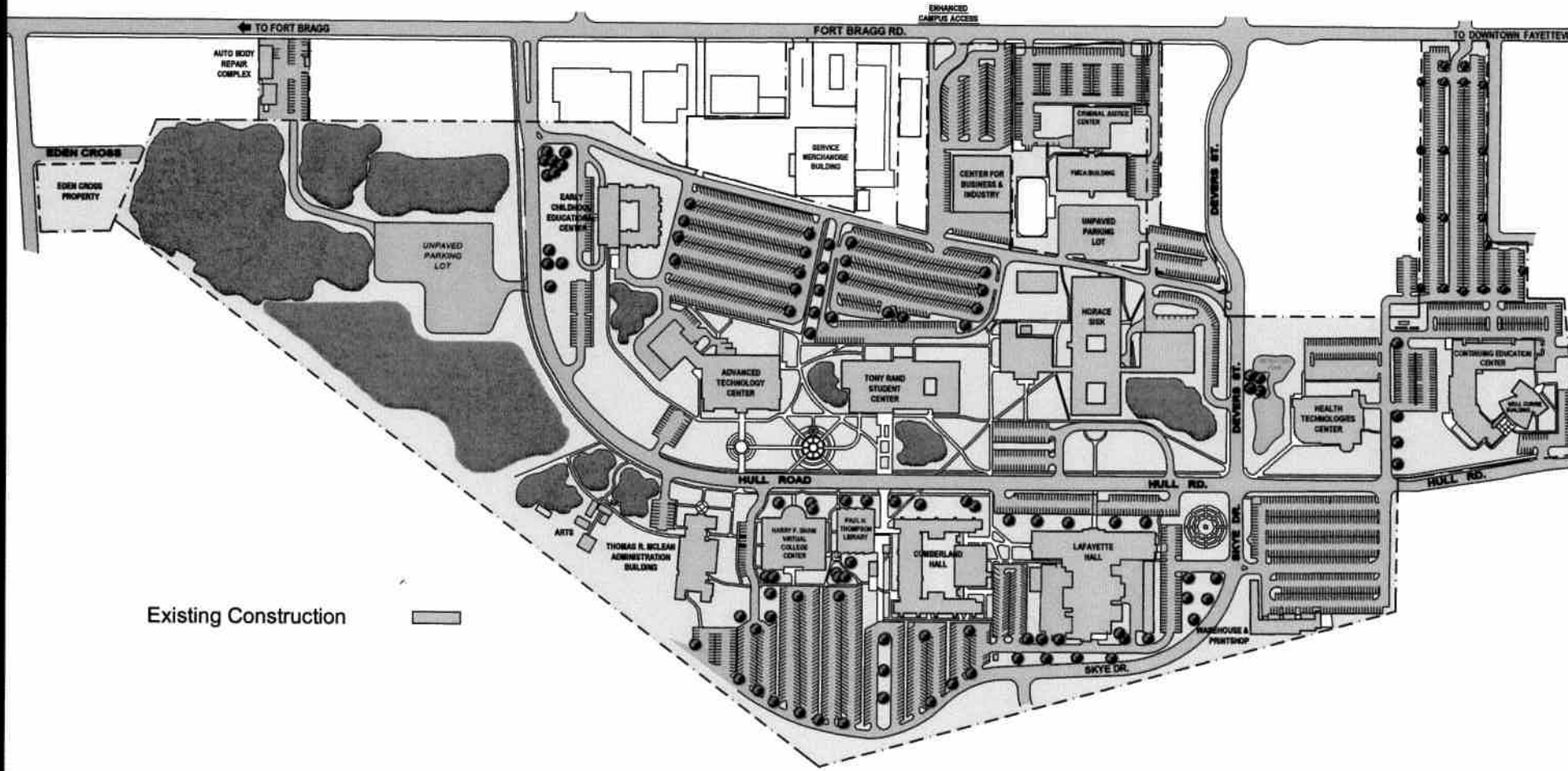
4. **Bus Shelters:** FTCC currently hosts three City of Fayetteville bus stops: one on Devers Street and two on Hull Road. It is recommended that the College work with the City to install bus shelters at these locations.

5. **Parking:** FTCC has a large amount of parking distributed over the campus and in locations not easily observed from the major campus thoroughfares. The college should consider development of secure, Faculty Only parking lots and an access control system. The parking located at the Warehouse should be reconfigured to allow a proper turning configuration for large trucks and delivery vehicles.

6. **Video Surveillance:** The current state of world affairs has brought enhanced security consciousness to all aspects of our daily lives. In keeping with the current trends, the College should continue expanding its video surveillance capabilities.

APPENDIX A

Current Site Plans
Existing Space Assignments by Building

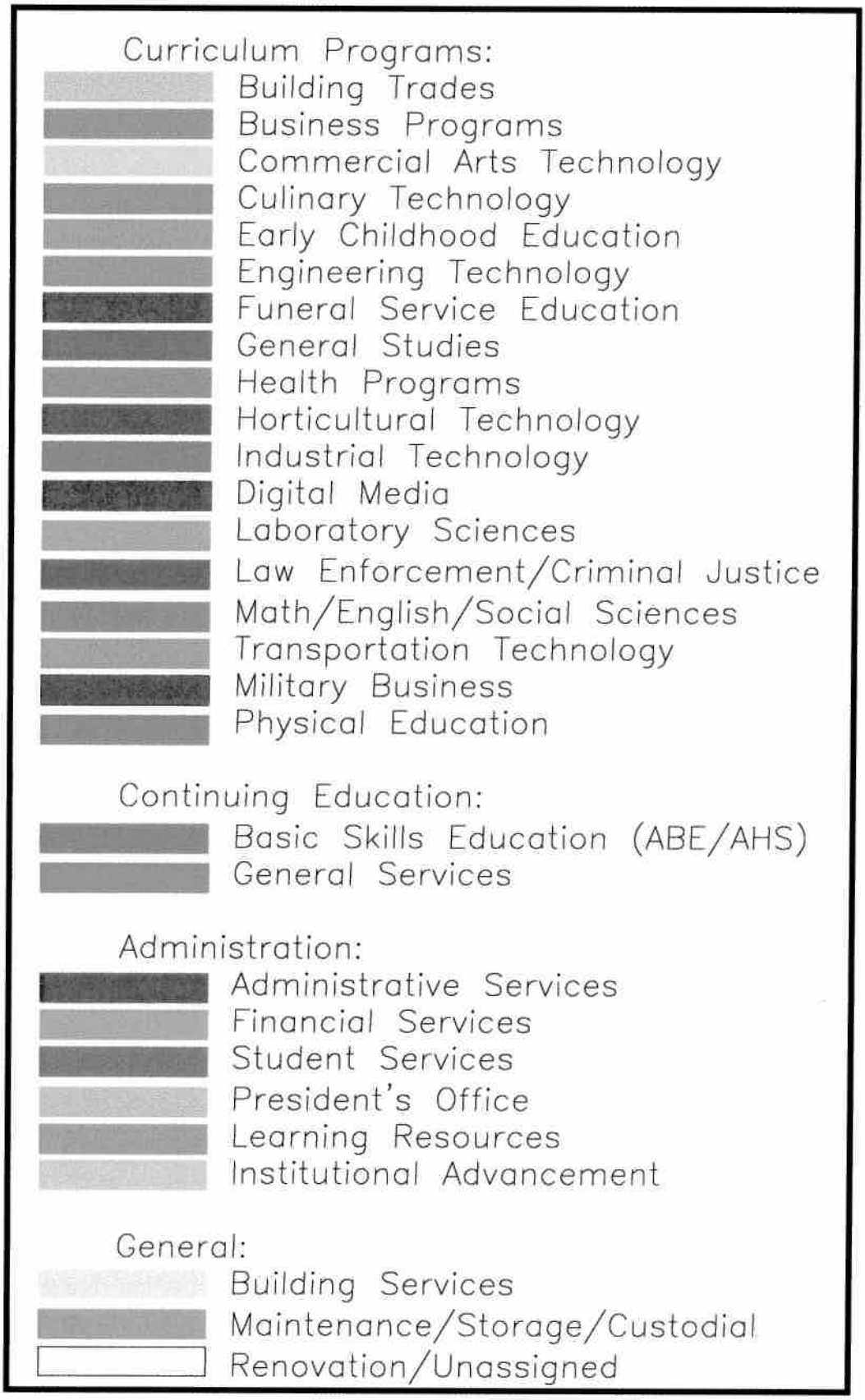


MBAJ architecture

FTCC

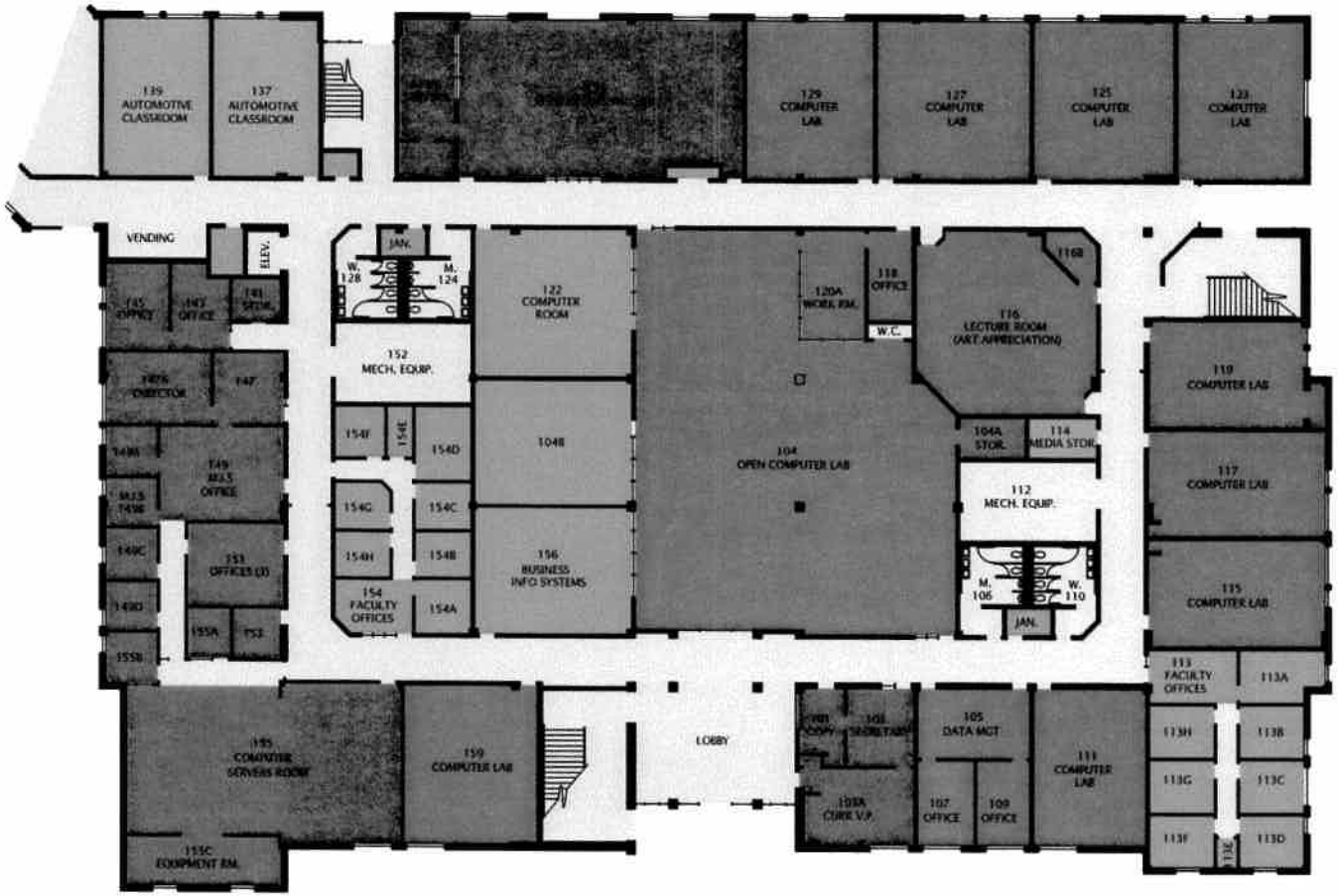
FAYETTEVILLE TECHNICAL COMMUNITY COLLEG

Existing Campus Plan



MBAJ architecture

FTCC

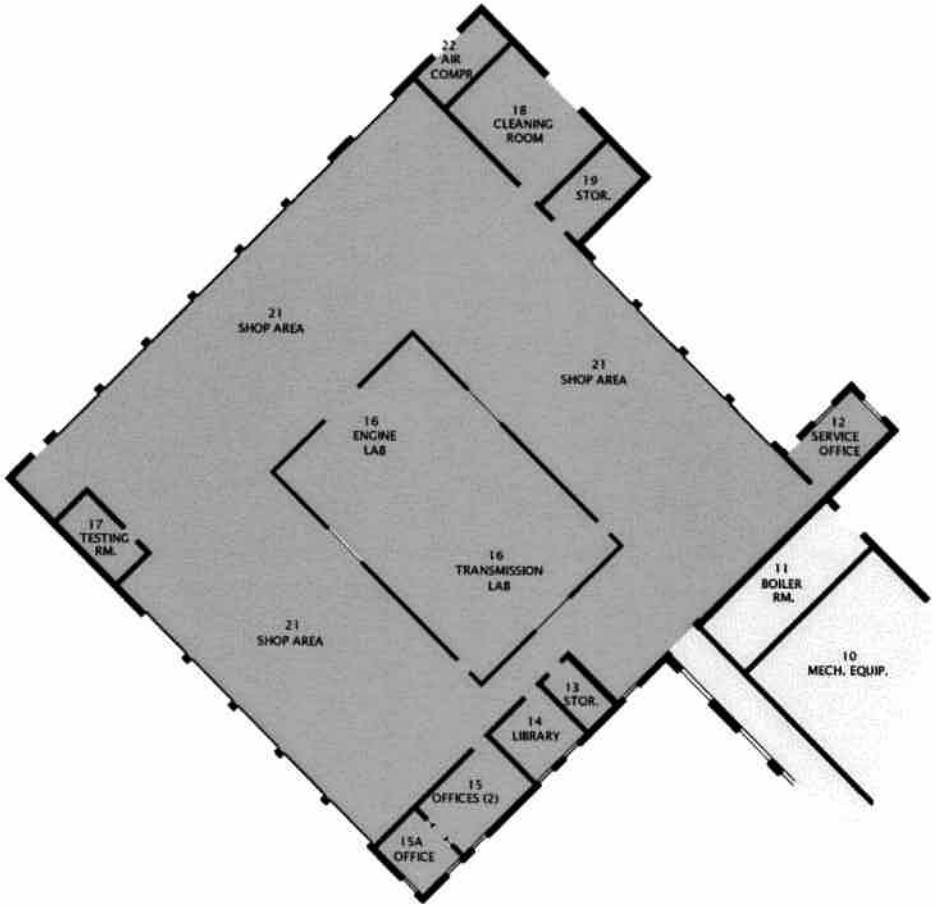


1ST FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE ADVANCED TECHNOLOGY CENTER



1ST FLOOR PLAN

MBAJ architecture

FTCC

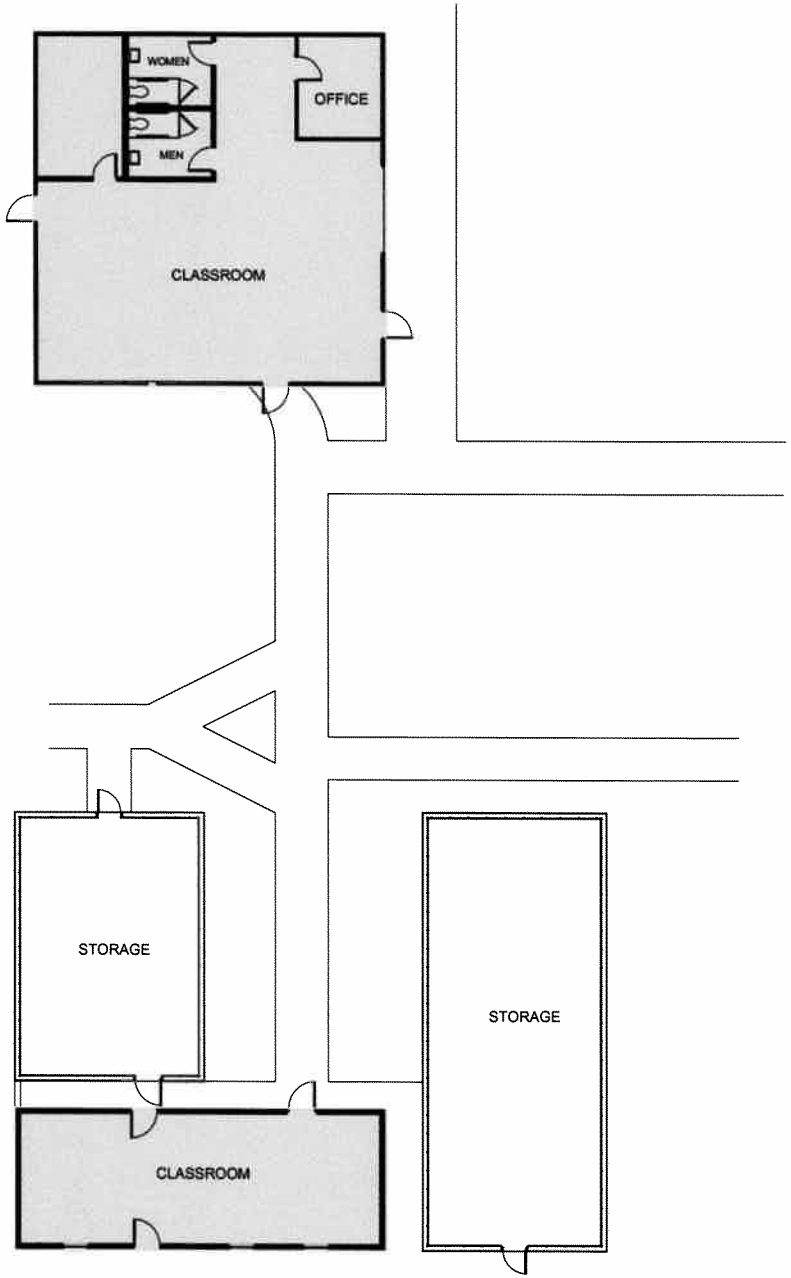
FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE ADVANCED TECHNOLOGY CENTER

2ND FLOOR PLAN

MBAJ architecture

FTCC

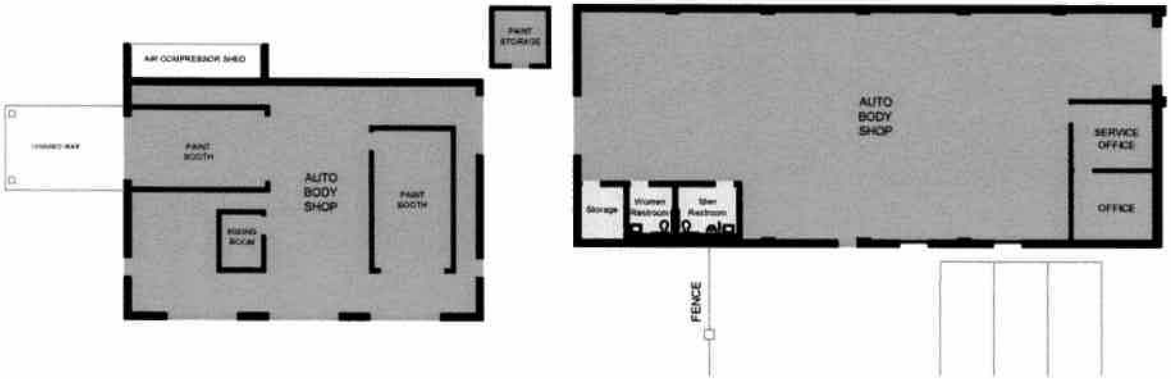
FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE ADVANCED TECHNOLOGY CENTER

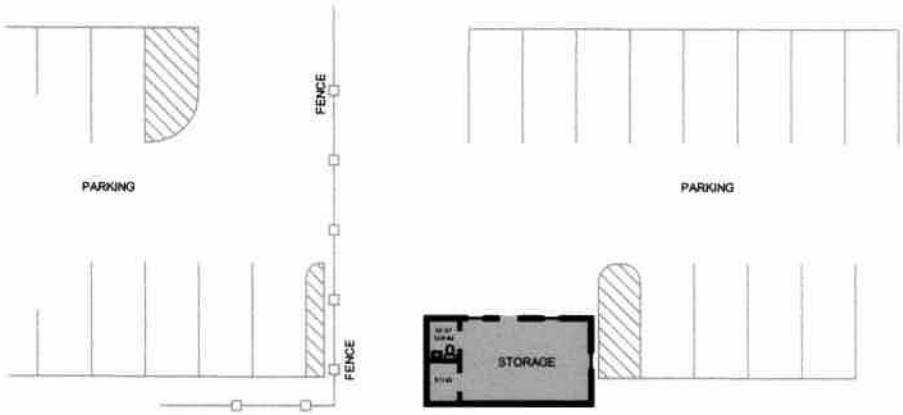


FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE ART COMPLEX

MBAJ architecture

FTCC





MBAJ architecture

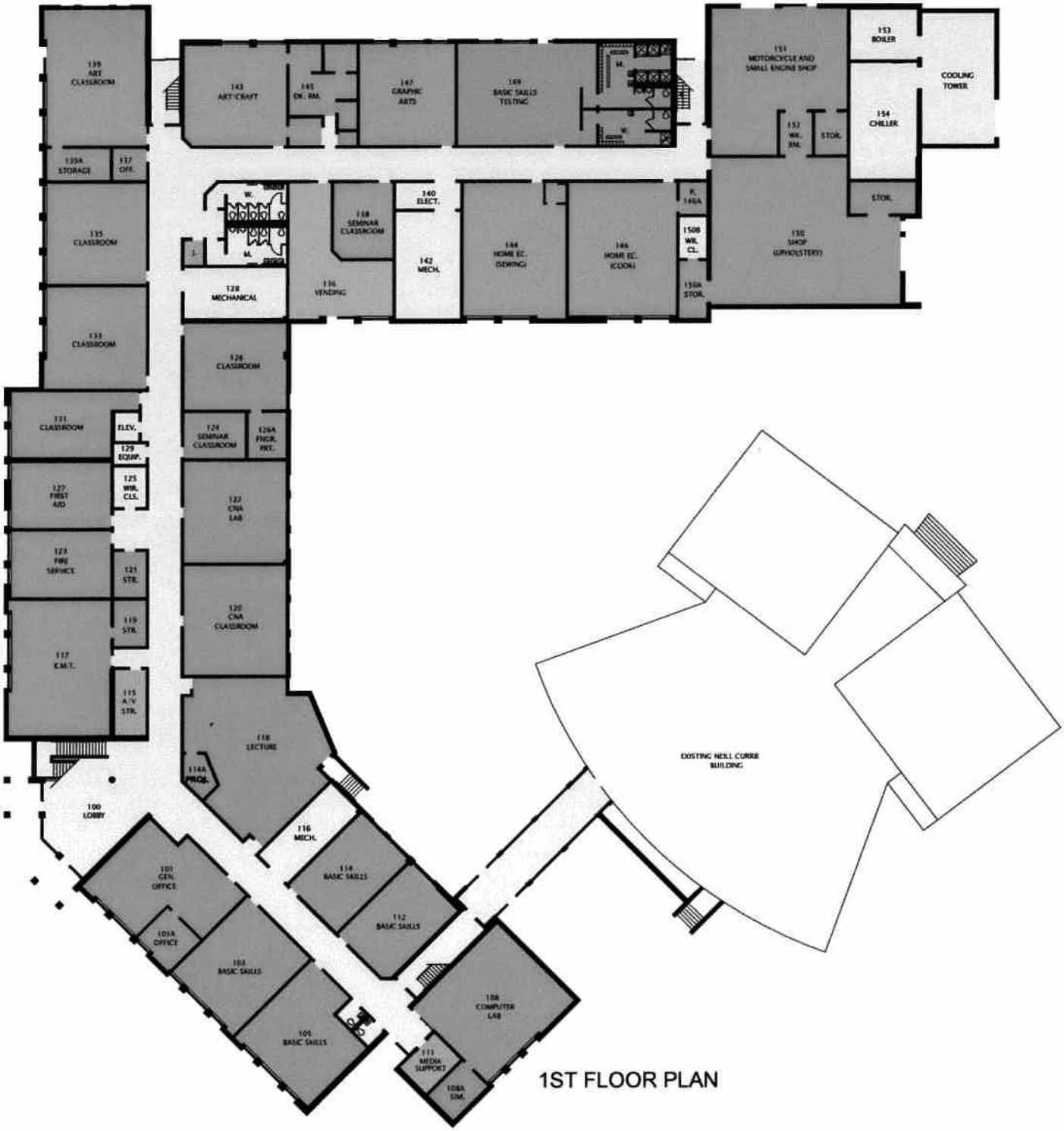
FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE AUTO BODY REPAIR COMPLEX

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
CENTER FOR BUSINESS AND INDUSTRY



1ST FLOOR PLAN

MBAJ architecture

FTCC

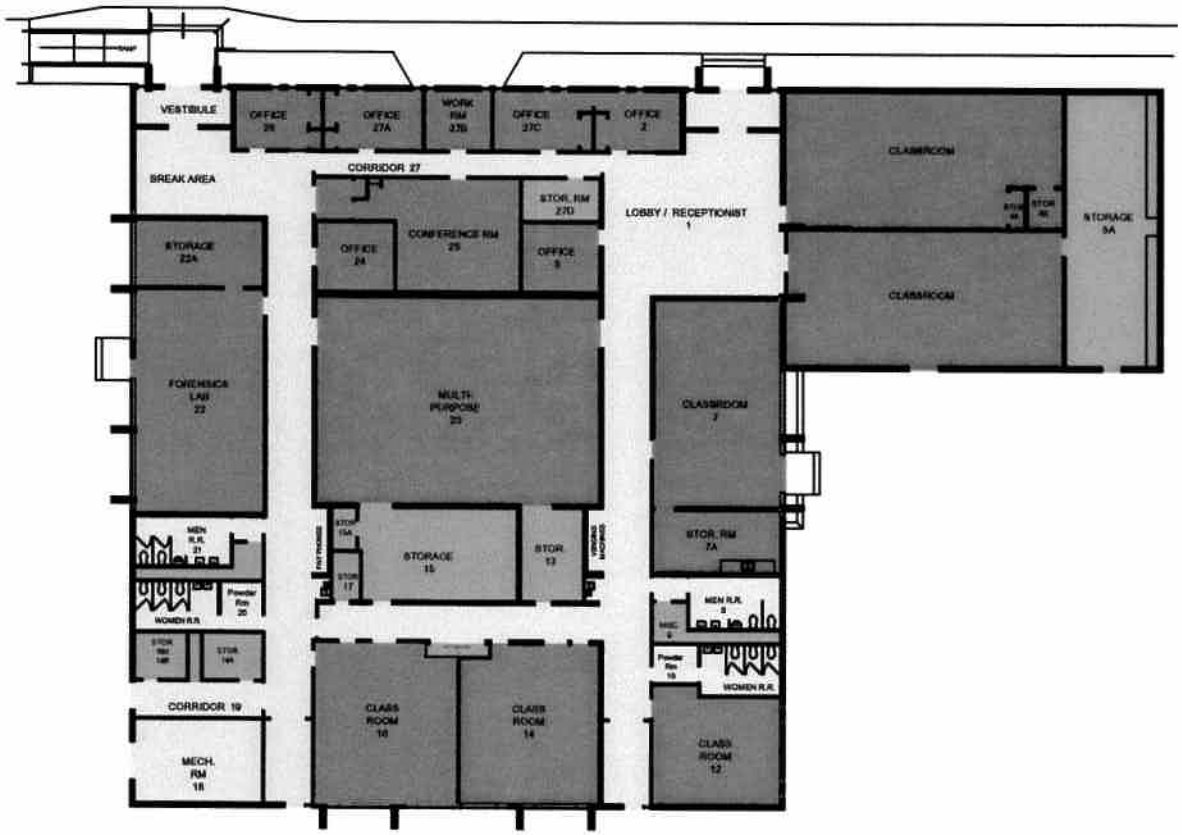
FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE CONTINUING EDUCATION CENTER

2ND FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
CONTINUING EDUCATION CENTER



MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE CRIMINAL JUSTICE CENTER

1ST FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
CUMBERLAND HALL

2ND FLOOR PLAN

MBAJ architecture

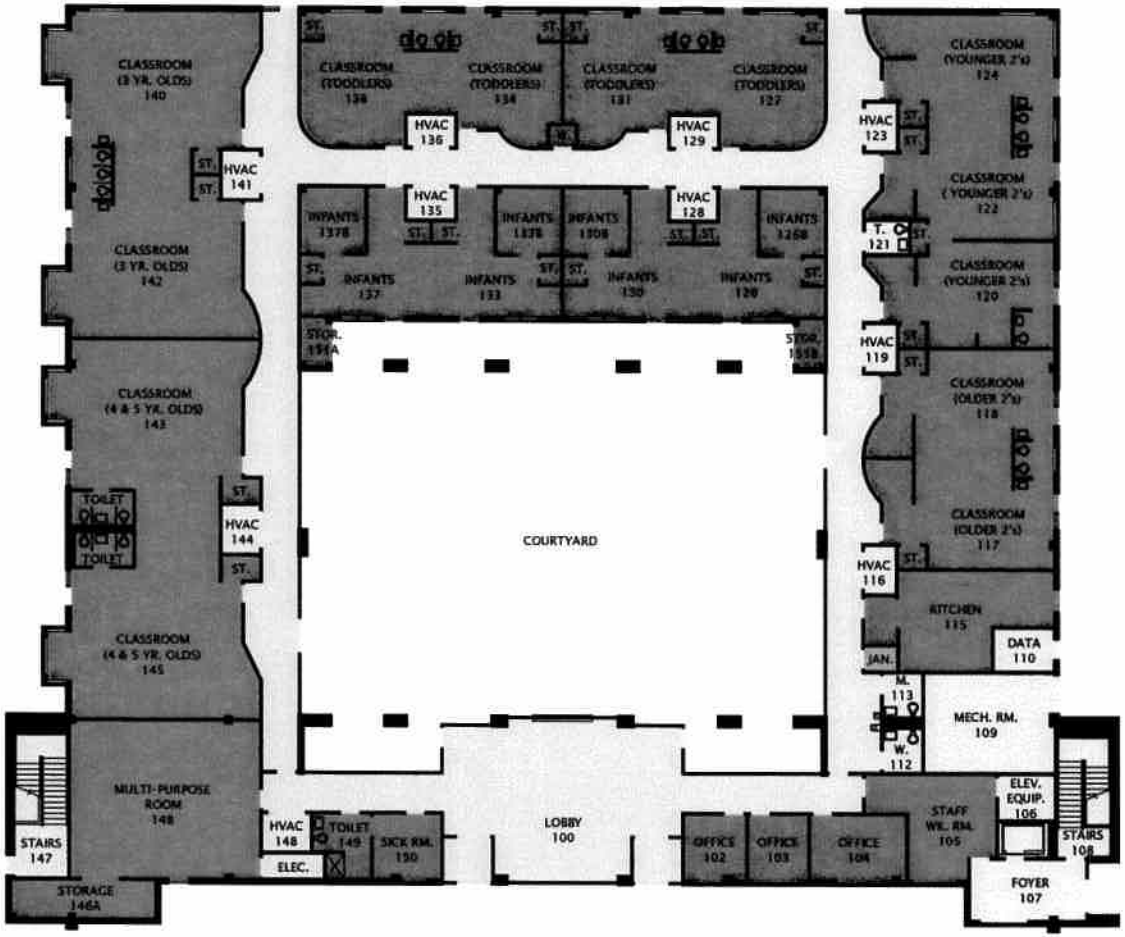
FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
CUMBERLAND HALL

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
NEIL CURRIE BUILDING

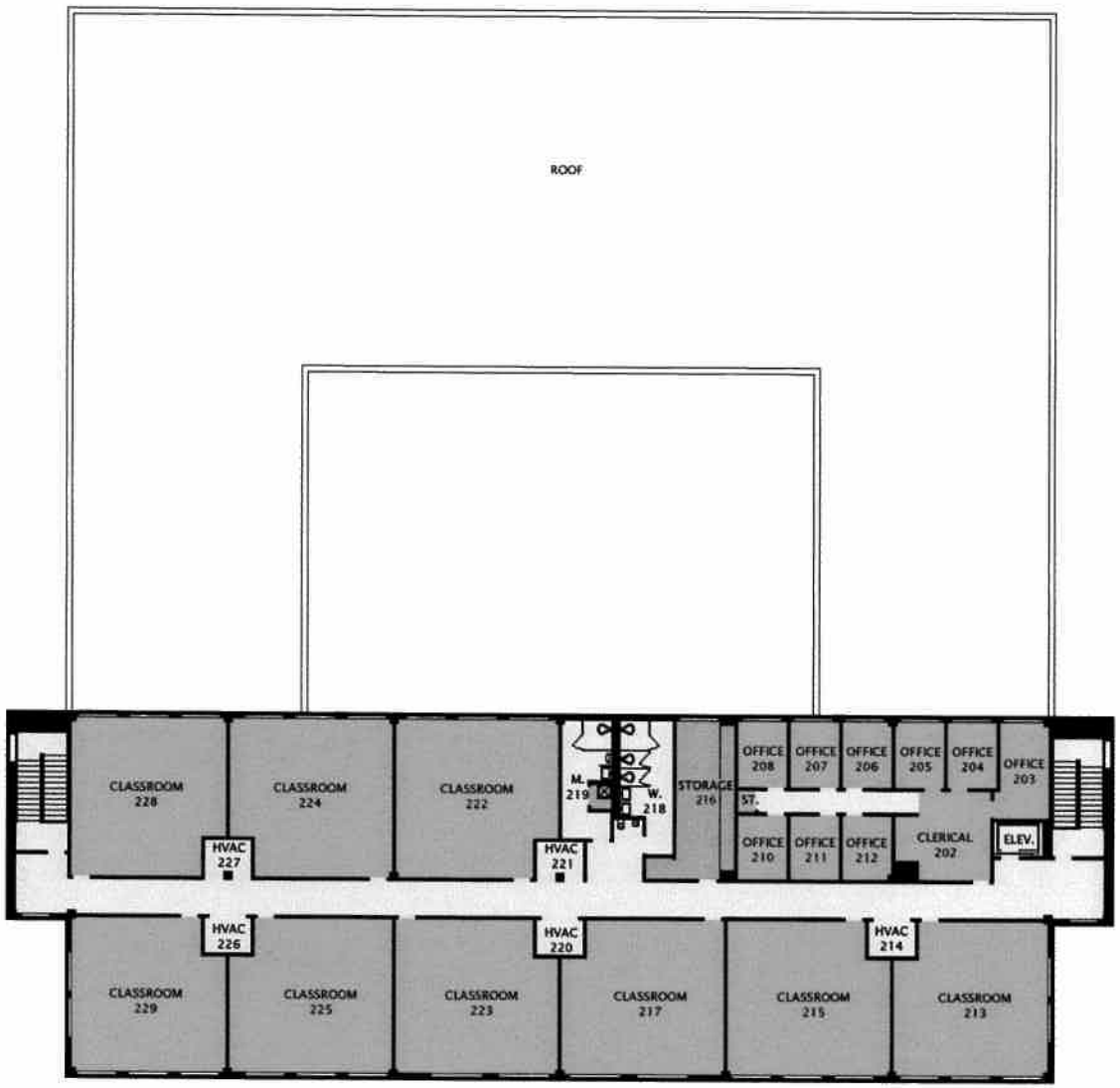


1ST FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE EARLY CHILDHOOD EDUCATIONAL CENTER



2ND FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
EARLY CHILDHOOD EDUCATIONAL CENTER

1ST FLOOR PLAN

MBAJ architecture

FTCC

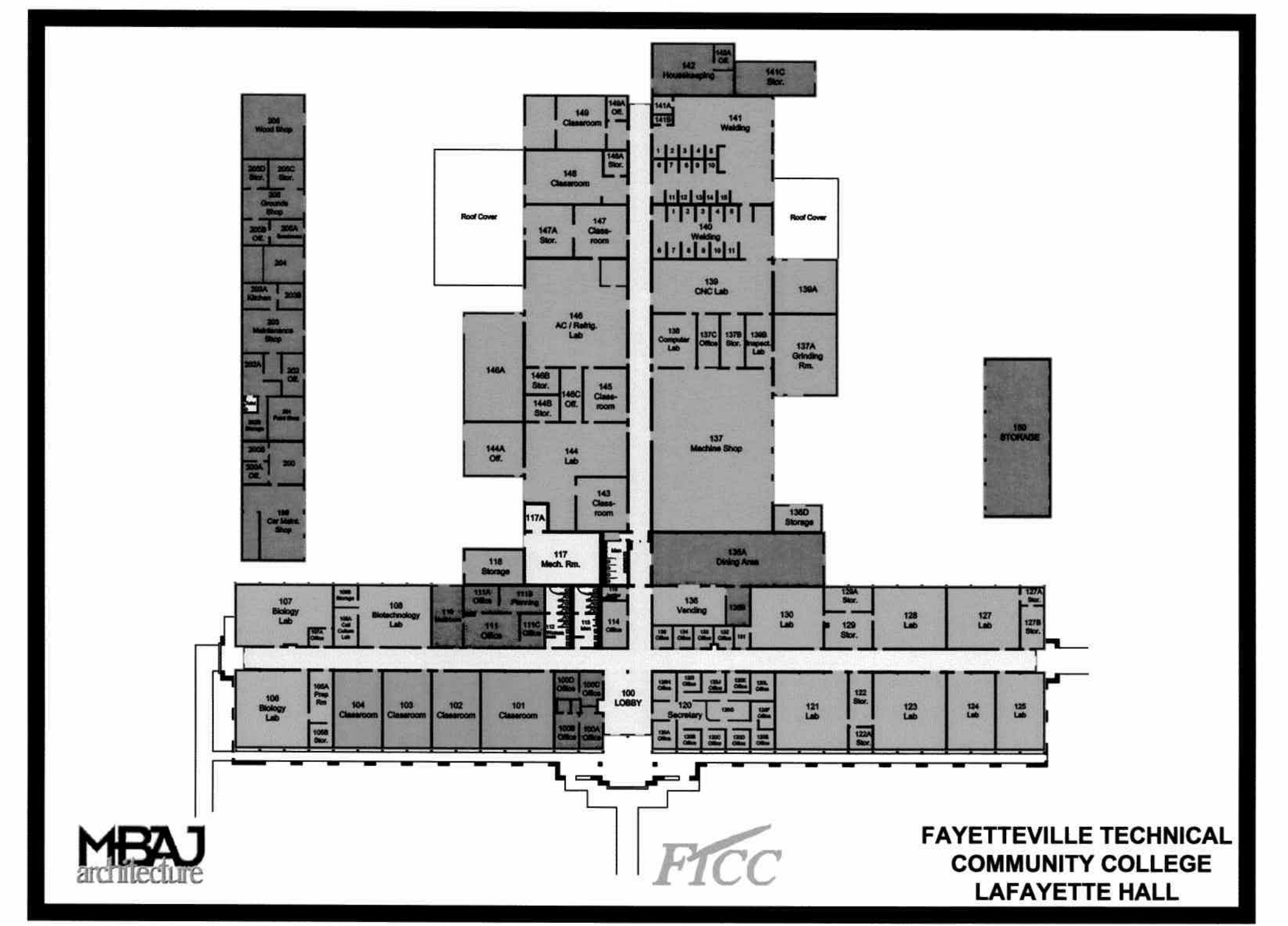
FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE HEALTH TECHNOLOGIES CENTER

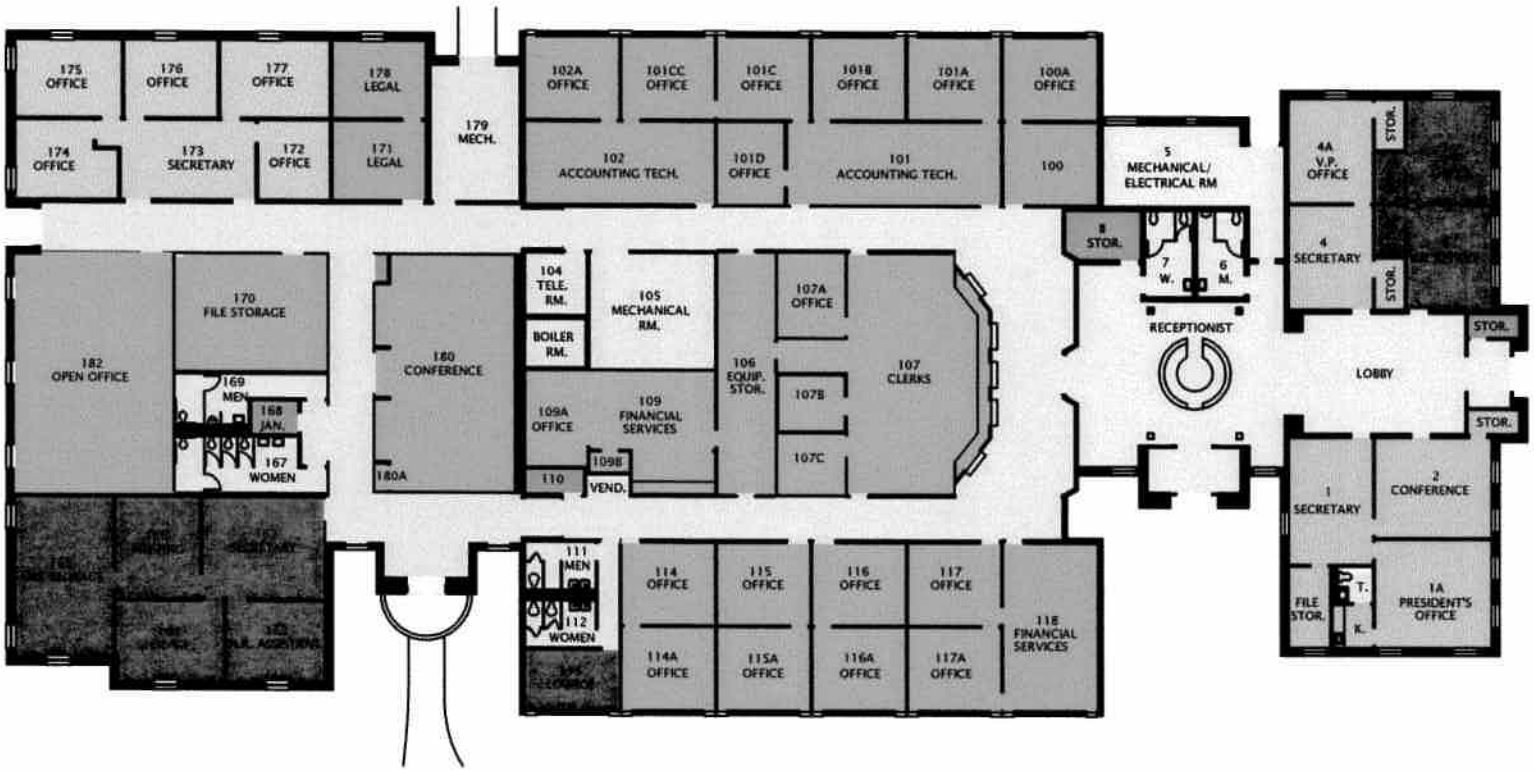
2ND FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE HEALTH TECHNOLOGIES CENTER



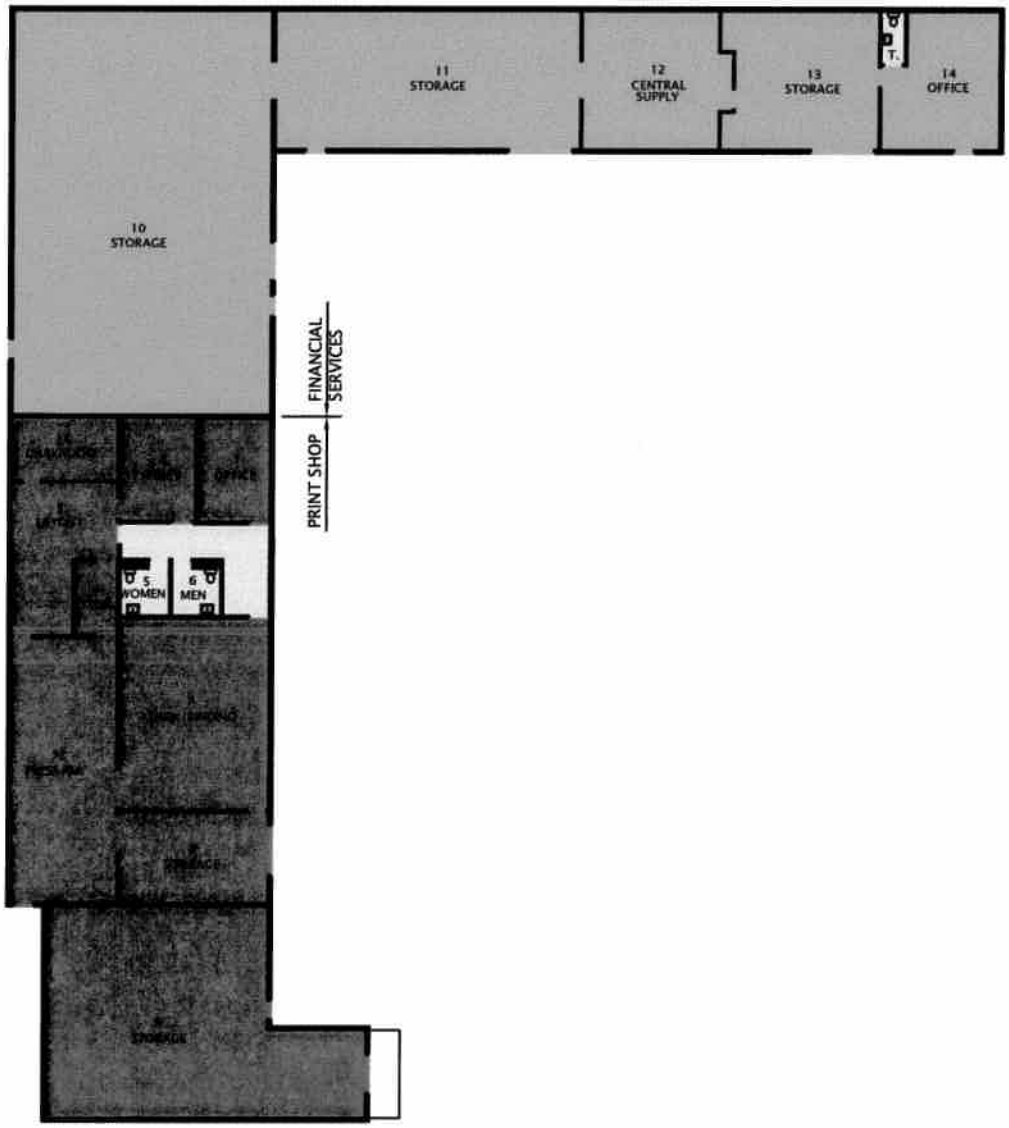


1ST FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
THOMAS R. MCLEAN ADMINISTRATION BUILDING



MBAJ architecture

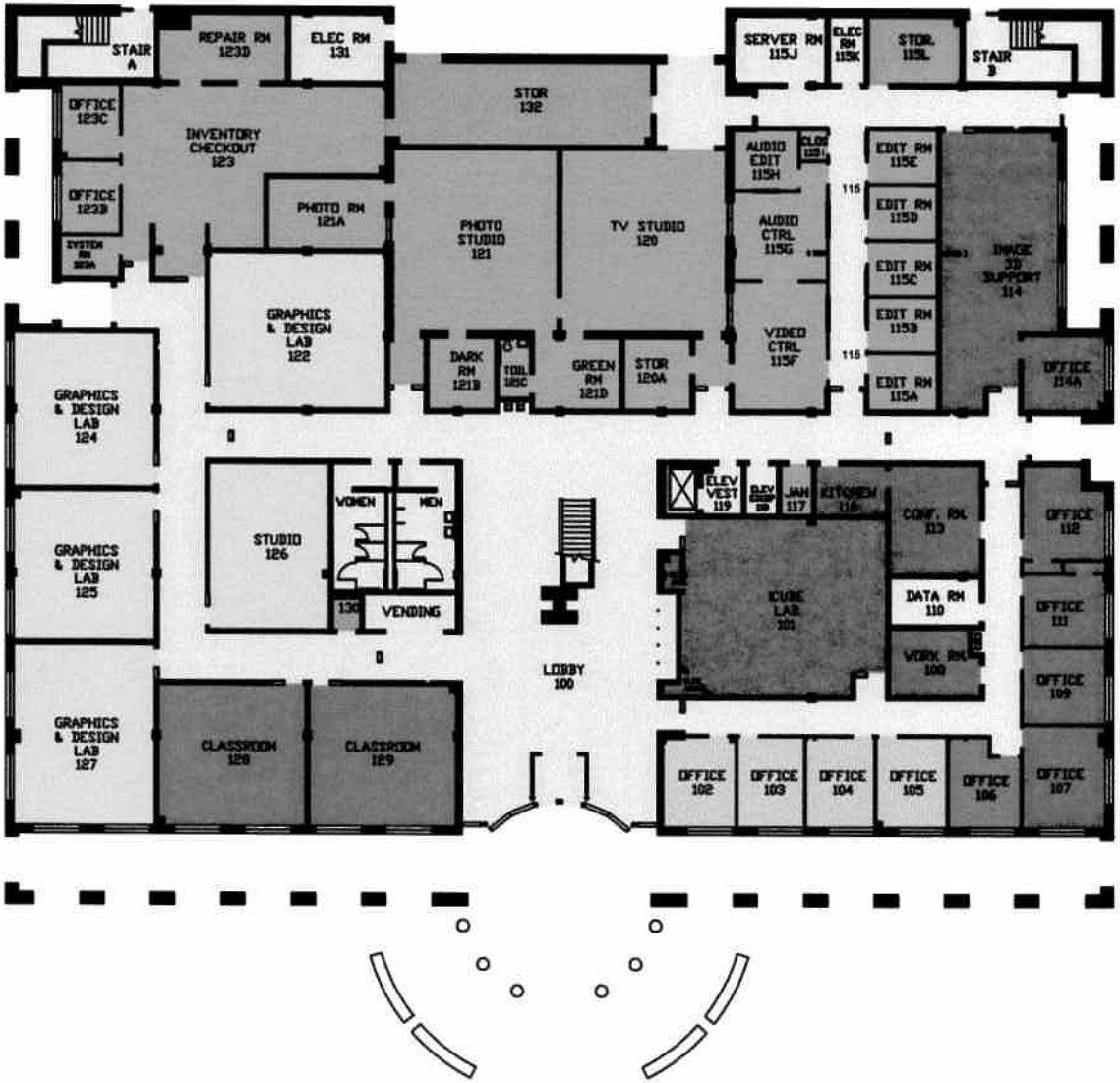
FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
PRINT SHOP / WAREHOUSE

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
TONY RAND STUDENT CENTER

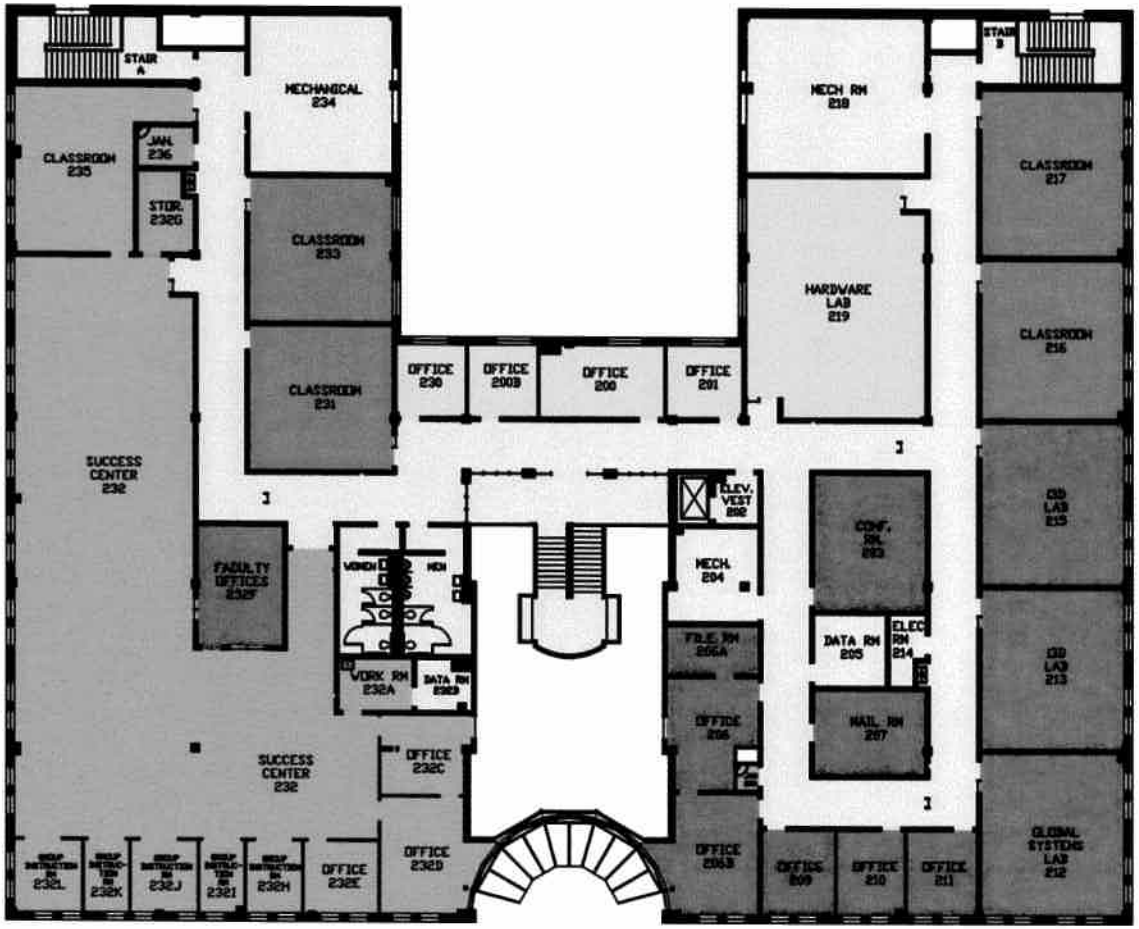


1ST FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
HARRY F. SHAW VIRTUAL COLLEGE CENTER



2ND FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
HARRY F. SHAW VIRTUAL COLLEGE CENTER

MBAJ architecture

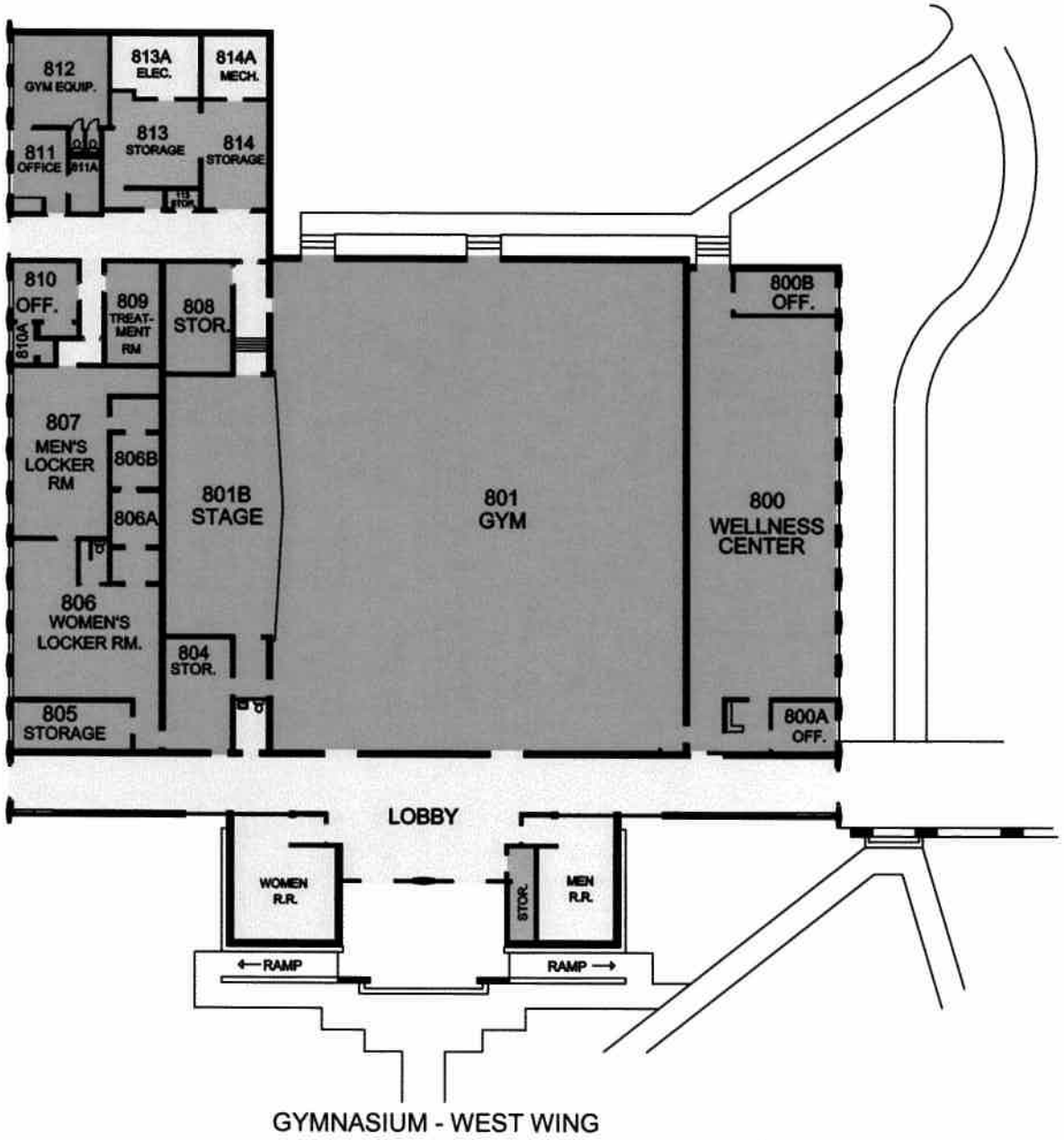
FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE HORACE SISK BUILDING

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
HORACE SISK BUILDING

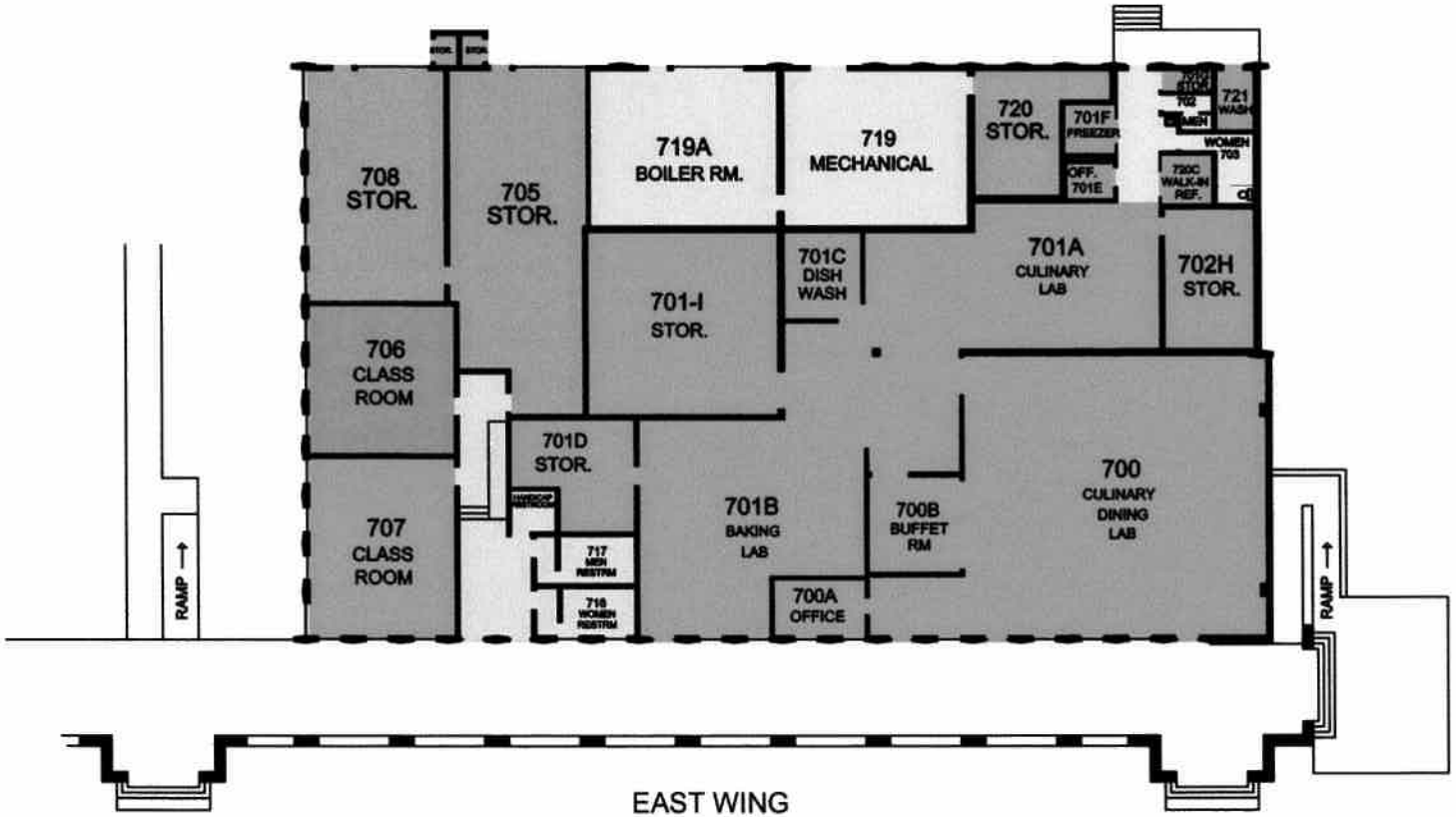


GYMNASIUM - WEST WING

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
HORACE SISK BUILDING



MBAJ architecture

FTCC

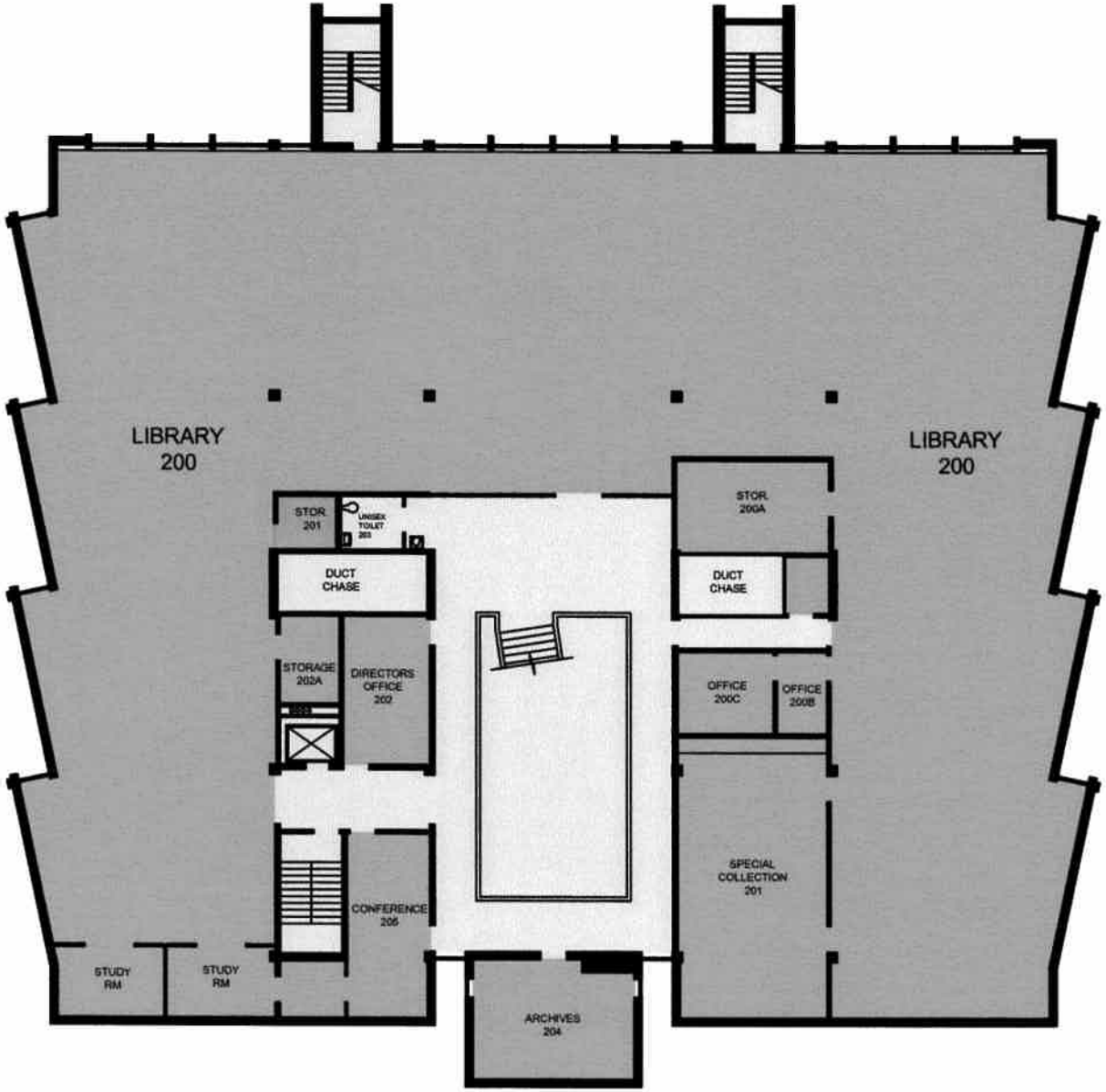
FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
HORACE SISK BUILDING

1ST FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
PAUL H. THOMPSON LIBRARY

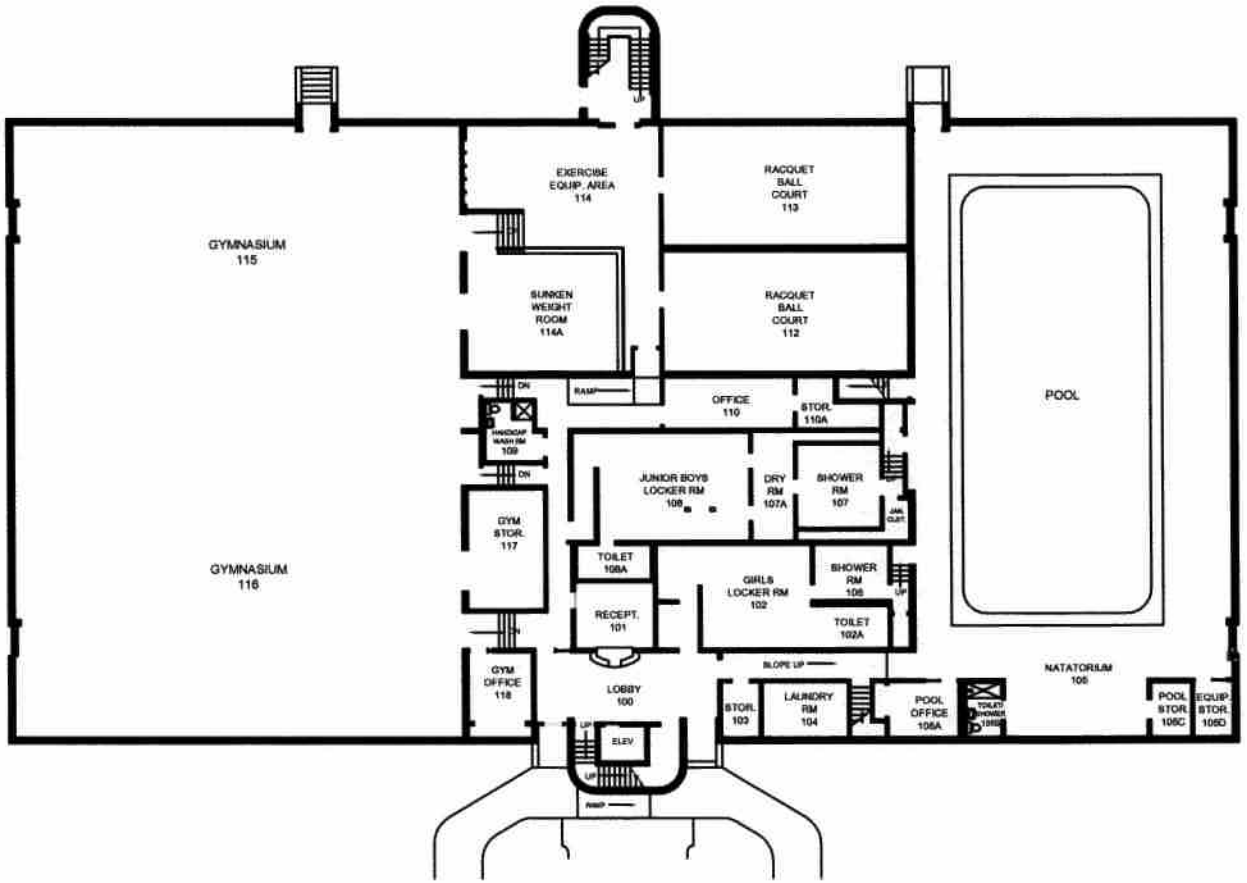


2ND FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
PAUL H. THOMPSON LIBRARY

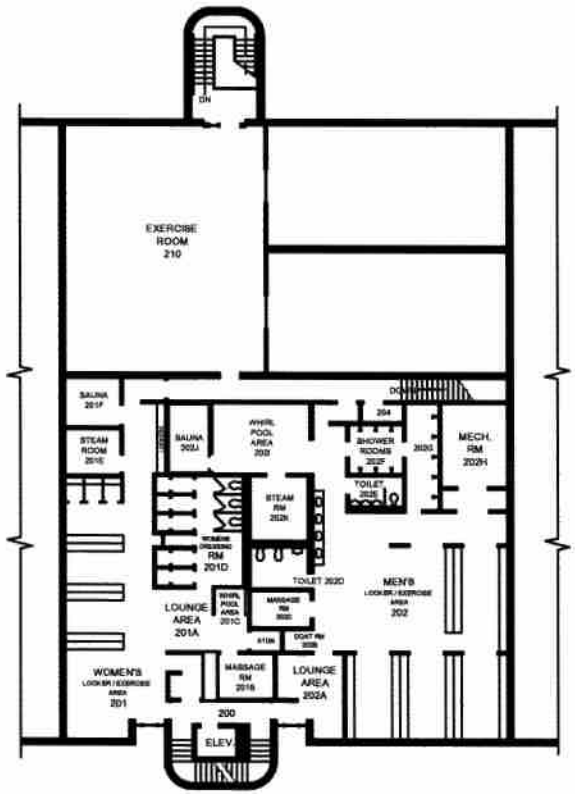


1ST FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
YMCA BUILDING

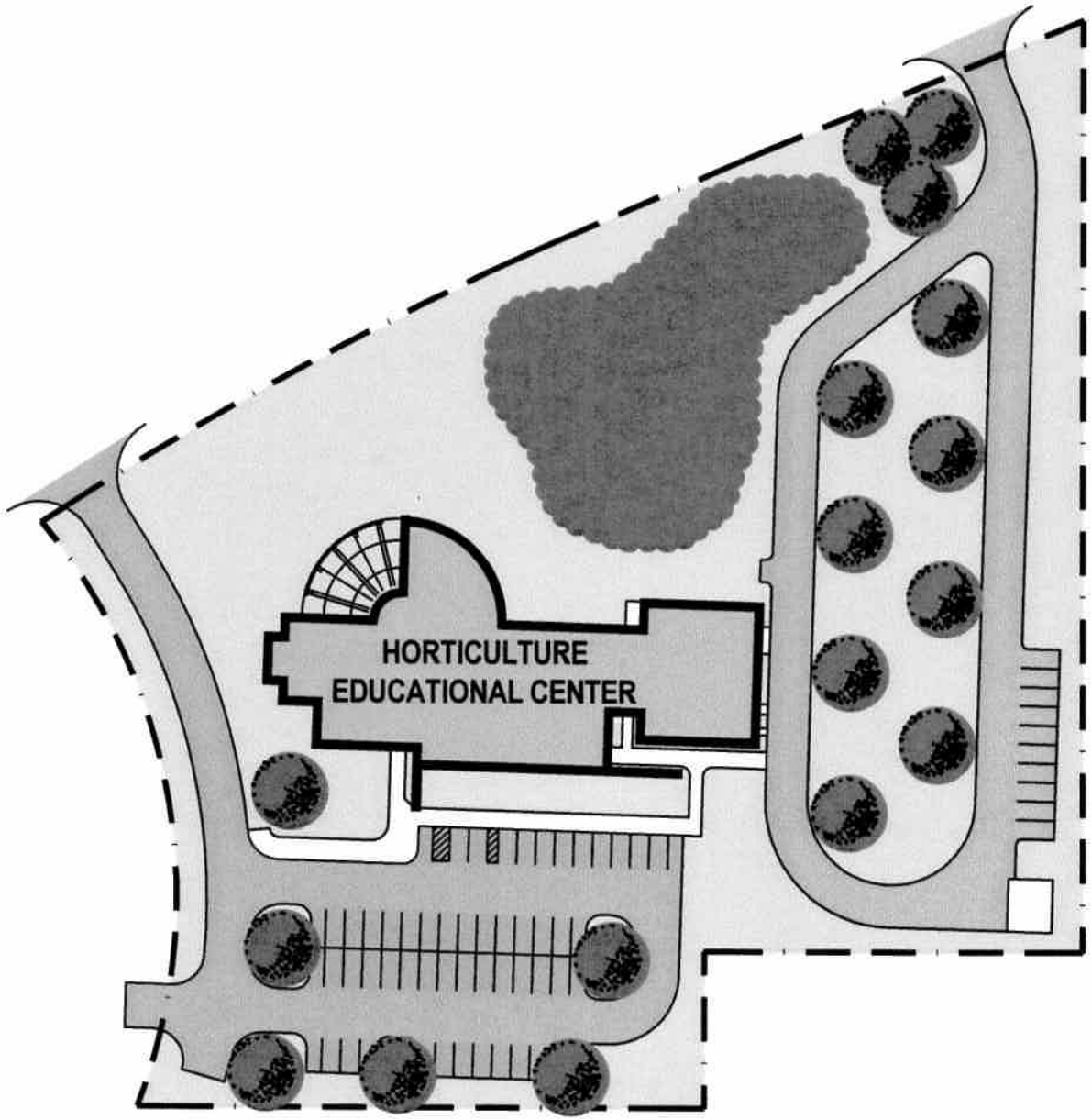


2ND FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE YMCA BUILDING



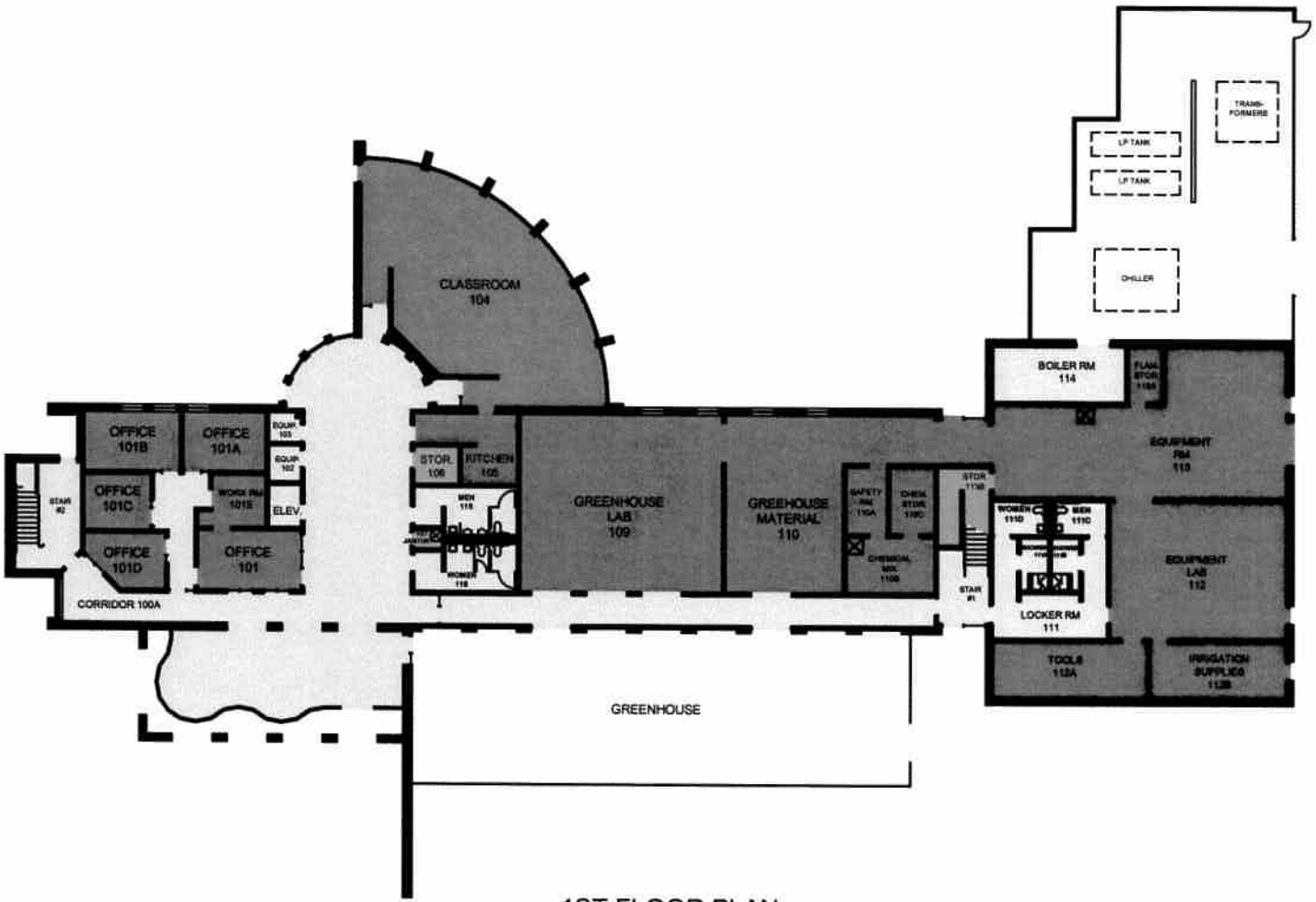
MBAJ architecture

HORTICULTURE EDUCATIONAL CENTER

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE

Facilities Utilization Study

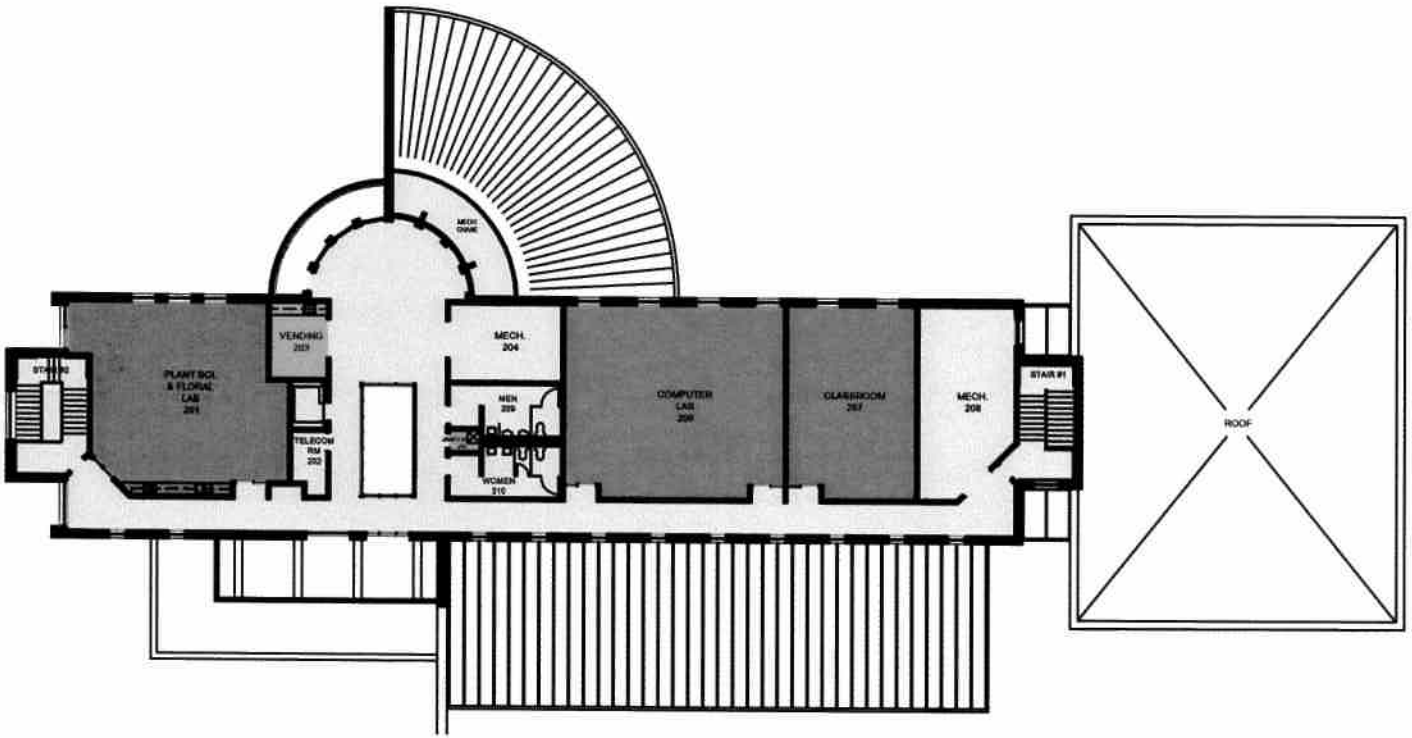


1ST FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE HORTICULTURE EDUCATIONAL CENTER

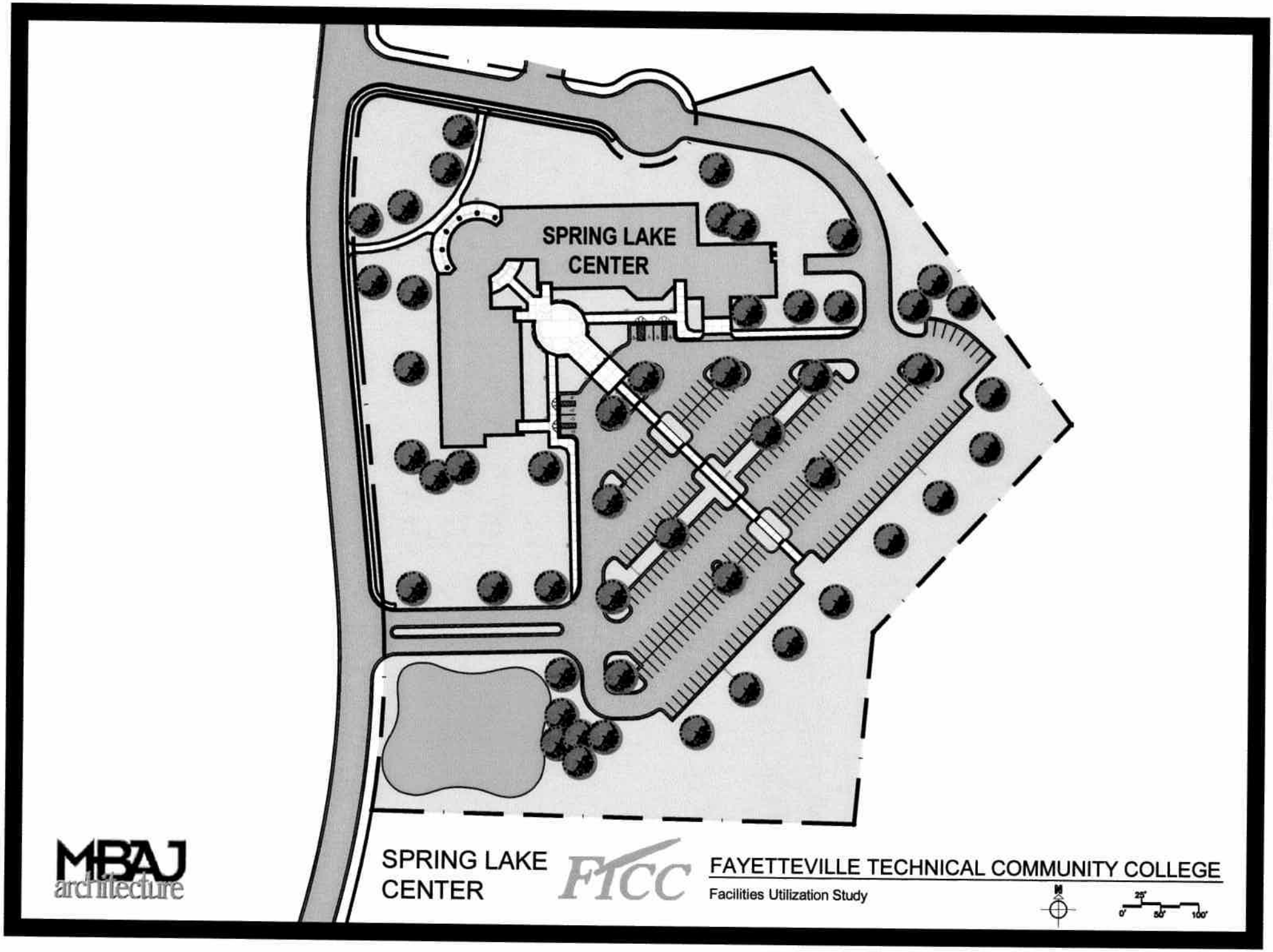


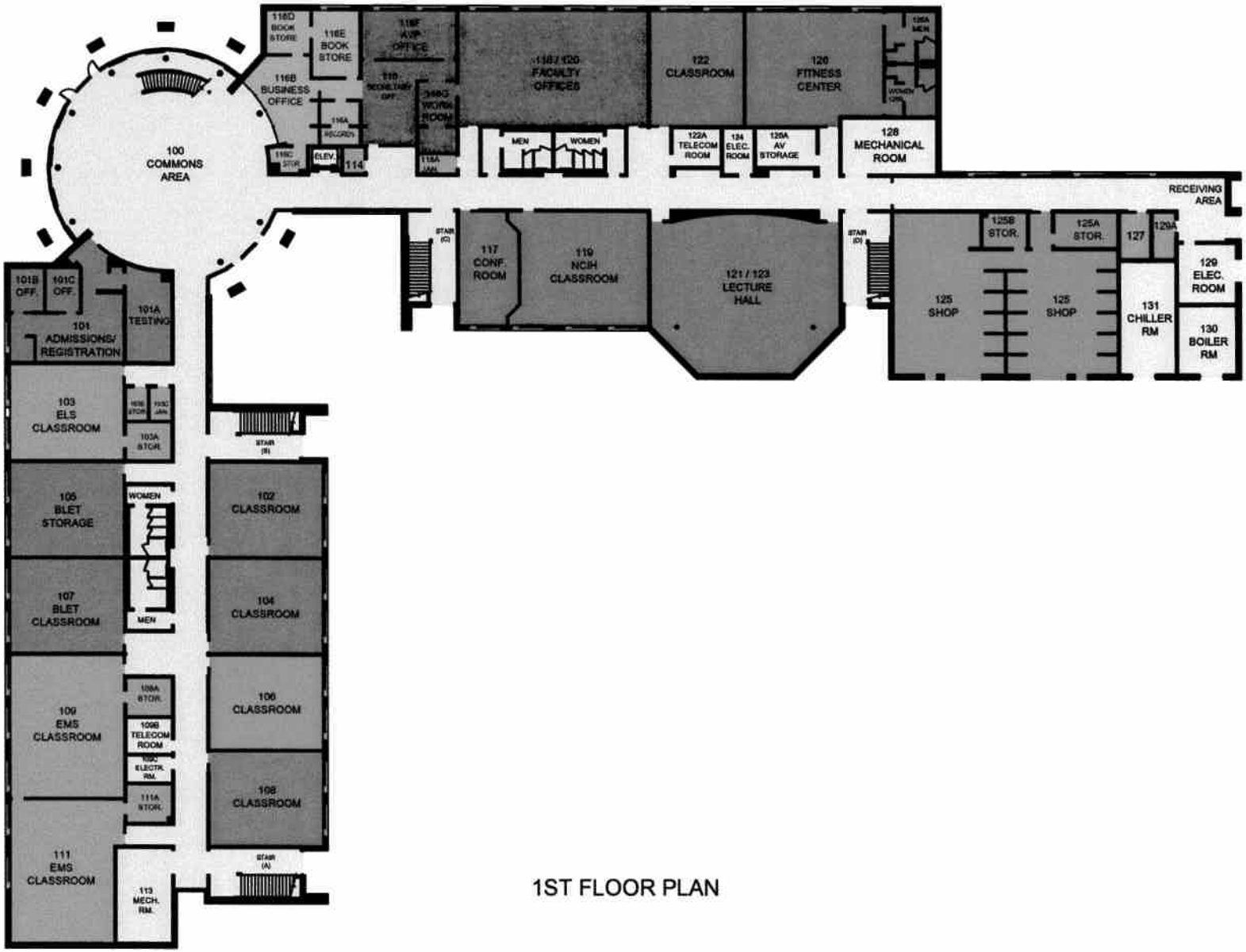
2ND FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
HORTICULTURE EDUCATIONAL CENTER



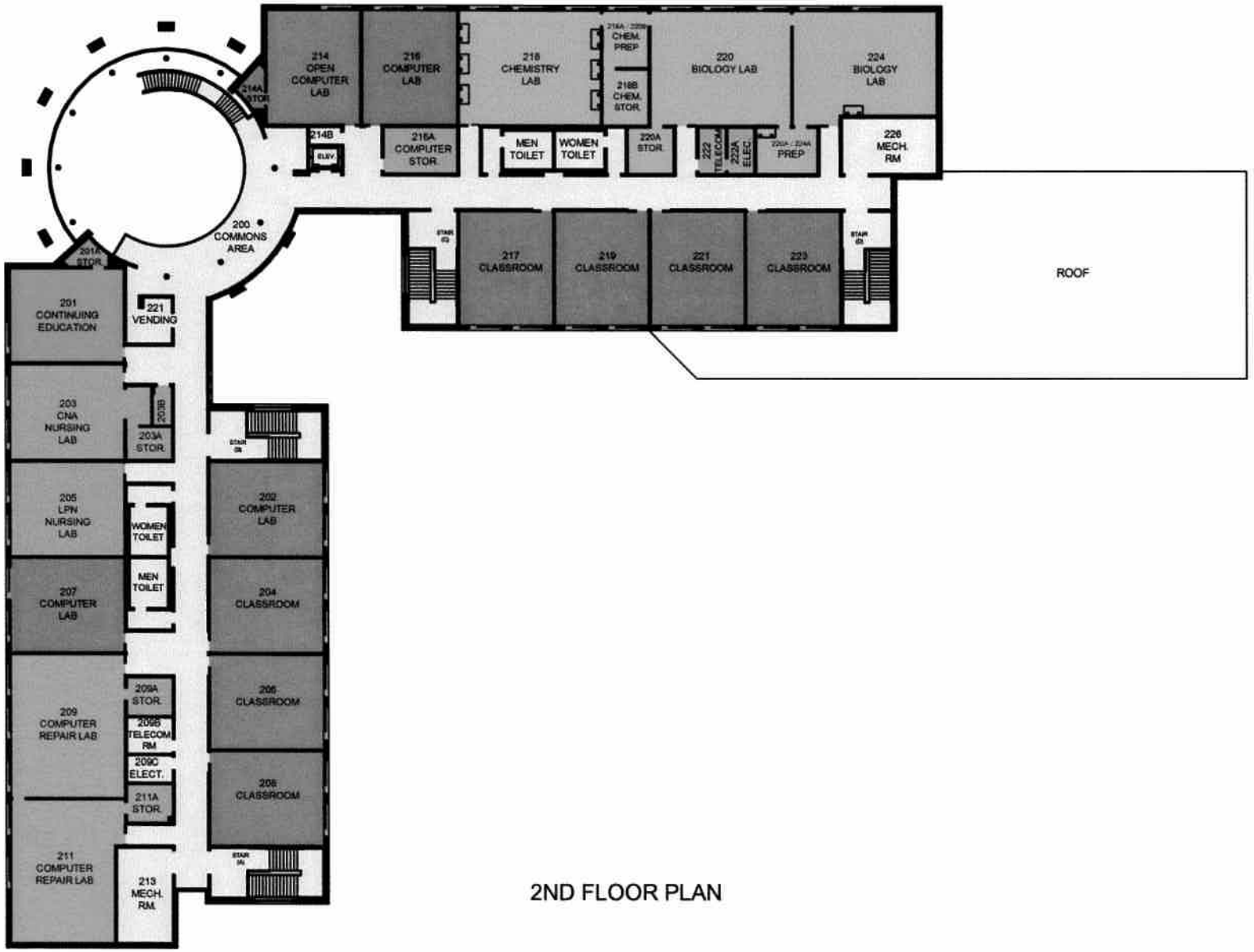


1ST FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE SPRING LAKE CENTER



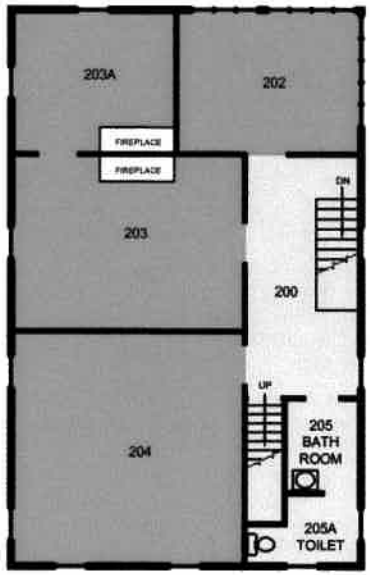
2ND FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
SPRING LAKE CENTER

1ST FLOOR PLAN

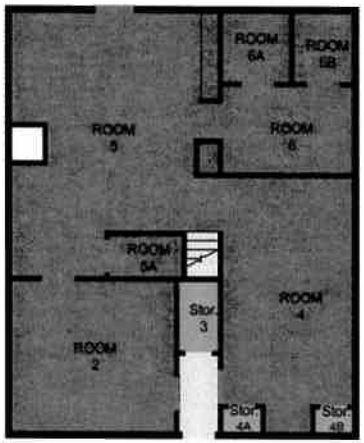


2ND FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE CULTURAL RESOURCE CENTER



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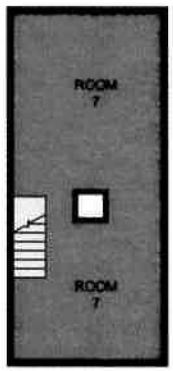


2ND FLOOR PLAN

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
MILITARY BUSINESS CENTER

APPENDIX B

Infrastructure Analysis

Civil Engineering Analysis
PME Engineering Analysis

MBAJ architecture

CLH design, p.a.

MacGregor Park, 125 Edinburgh South, Suite 310
Cary, North Carolina 27511
Phone: (919) 319-6716 Fax: (919) 319-7516

7 May 2008

TO:	John Thomas – MBAJ Architects
FROM:	CLH Design, P.A.
RE:	FAYETTEVILLE TECH. COMMUNITY COLLEGE FACILITIES MASTER PLAN
CC:	(08-127/design)

Priority Projects

Project 1: 'Satellite Campus'

- At the time of this facilities master plan project, the site for the new facility was unknown. Upon the design phase of this project, it will be prudent to work with the City of Fayetteville to design to meet all City codes for parking, storm water management, sewer, water, utilities, setback requirements, and landscaping requirements to meet site plan approval. Likewise, the City Traffic engineer and DOT should be consulted for necessary roadway improvements to facilitate the campus expansion.

Priority 2: 'Service Merchandise'

Background

The site for Priority Two is along Fort Bragg Rd. and formerly housed a 2 story Service Merchandise Store, a small pharmacy and a single story commercial building. All are zoned industrial. Because of their former uses the majority of the parcels are paved and utilities are on site.

Existing Site Conditions

General:
The site is 5.33 acres, located on the north side of Access Rd. across from two major parking lots. The one story commercial building will be demolished as will the pharmacy building leaving clear view of the Service Merchandise building from Fort Bragg Rd. FTCC wishes to use this as an opportunity to create a campus presence along the main thoroughfare, however, the loading dock faces the road and would not present the desired appearance for the college. Existing driveway cuts will be used to access the site from Fort Bragg Rd.

- ***Parking*** – There are 126 spaces for the Service Merchandise Building.
- ***Utilities*** – An 8" water line and a 8" sewer line serve the Service Merchandise Building.
- ***Stormwater Management*** –15" and 18" stormwater pipes are currently on site. They flow to the City stormwater infrastructure system along Fort Bragg Rd.
- ***Topography*** – The site is fairly flat with small walls between the properties and a small drainage culvert near Access Road.

- ***Circulation and Wayfinding*** – Relocating the loading dock will require alternate delivery truck access to the site. FTCC does not wish to mix student traffic with the delivery trucks, so a cross access agreement will be developed with the owner of the neighboring Major Appliance Building. Trucks will enter campus from Fort Bragg Rd on the existing FTCC entrance road, and turn right onto a drive across the Major Appliance site to access the loading dock. Three of the driveway cuts on Fort Bragg Rd will be closed.

Proposed Building Renovation:

- ***Building Use:*** The Service Merchandise will be renovated to house classrooms, the bookstore and campus security.

- ***Building Square Footage:*** Total square footage of the building is 70,000, with the following breakdown:
  - Classrooms-26,075 sf
  - Storage-2,200 sf
  - Faculty Offices – 1,500 sf
  - Bookstore – 13,570 sf
  - Security – 1,935 sf.
  - Other/Core – 24,720 sf

  The site allows for a future classroom addition of 22,800 sf.
- ***Parking and Circulation Requirements:*** The Service Merchandise renovation will require 141 spaces total to meet the City of Fayetteville's code requirements. The classroom addition will require an additional 76 spaces. Total parking required for the build out is 217 spaces which the site can support.
- ***Utilities:*** Adequate utilities serve the site.
- ***Storm Water Management:*** Because the current zoning is industrial and the site is mostly paved, the renovations will actually decrease the amount of impervious surface to meet the City's landscaping requirements. Also, FTCC wants the site to be a symbolic gateway for the campus on Fort Bragg Rd. and wishes to front the thoroughfare with landscape rather than parking and additional paving.
- ***Earthwork:*** Earthwork required consists of demolition and fine grading. The previous uses of the site negate nominal earthwork.
- ***Signage:*** A ground sign will be located on Fort Bragg Rd.

Project 3: 'New Industry Tech Training Facility

- Parking and Circulation Requirements:
  - ***Parking*** – The parking requirement per the City of Fayetteville is (1) space per 300 square feet of building space. The combined building space of the proposed Industry Training Center, Transportation Center and Auto Annex is approximately 118,000-sf. In order to meet code requirements, 394 new parking spaces are required.

    A new parking lot is scheduled to be completed by July 31 that will provide an additional 400 spaces. The parking lot is located north of the Continuing Education Center. FTCC is also currently researching a potential land acquisition with Vaughn Memorial Presbyterian Church at the corner of Fort Fort Bragg Rd. and Devers St.

  - ***Circulation*** - The campus has existing circulation and parking problems. There are high traffic volumes on Hull Rd. and the FTCC Access Road that connects Hull Rd. and Devers St. The FTCC campus experiences the highest traffic volume between the hours of 7:30 am and 1:00 pm. NCDOT has concerns with morning traffic problems

on Morganton Rd. The City of Fayetteville will not grant site plan approval for this project until circulation is improved, both on and off site. The City has indicated to CLH that at this time, they will not grant additional driveway cuts on Fort Bragg Rd for FTCC for future projects.

The following has been proposed to improve internal circulation; Extend Skye Dr. along the west side of the campus to create a boundary road that will connect with either Eden Cross or Hull Rd. The estimated cost of this boundary road is $500,000. This cost is based on a new road beginning at the existing parking lot south of the Thomas Mclean Administration Building westward through the former horticulture area. The proposed route goes between the western property line and existing greenhouses. The route is also extremely close to the adjacent neighborhood. Property setbacks, building setbacks and buffer setbacks will need to be verified in this area. Adjacent property owners will need to be notified of the proposed route. The greenhouses may also need to be relocated to keep this route.

NCDOT is also suggesting a entrance to the campus from Morganton Rd. The area in question is off-site, so FTCC will need to investigate acquiring the land.

There is also the possibility for a future cul-de-sac in the curve on Hull Rd. (should Hull road be closed) that will eliminate the connection to Fort Bragg Rd. This will eliminate through traffic from the adjacent neighborhood(s).

- ***Infrastructure Upgrades (water and sewer, etc.)*** - The proposed additions at Fayetteville Tech pose no problems with existing water and sewer on site. Fayetteville Public Works Commission (PWC) has provided information showing an 8" water line that parallels Hull Road, as well as a 6" water line that runs along Fort Bragg Road. The auto body annex building would tap directly into the 6" line on Fort Bragg Road, and the industry training center will tie into the 8" line on Hull Road. Each building will require a fire loop with hydrants. With future growth of Fayetteville expected, PWC has ensured us that water distribution in this area will not be a problem.

  PWC has also provided sewer information on or around the campus. The FTCC site is located in the Cross Creek Basin. The Cross Creek Waste Reclamation Facility is permitted at 26 Million Gallons per Day (MGD) and the present average daily flow for that facility is 12 MGD. Therefore wastewater treatment capacity is not an issue. Currently on campus there is a 12" gravity main flowing north along Devers St. and then East Fort Bragg Road. There is also 8" sewer line that parallels Fort Bragg Road and ties into the previously mentioned 12" gravity main. The auto body annex will tie directly into this 8" line for sewer service. The industry training center will have a gravity sewer line that parallels Hull Road and ties directly into the before mentioned 8" sewer line on Fort Bragg Road. PWC provided that there will be no downstream lift stations from the campus. In addition, PWC ensures that there will be capacity issues with this 12" gravity main or the downstream interceptors.

  The cost of the water and sewer systems includes but is not limited to cost of pipe per linear foot, manholes, cleanouts, meters, backflow preventers, etc.

- ***Stormwater Management*** - Fayetteville Tech is located on the dividing line between Hybarts Branch (Class C) and Little Cross Creek (Class WS-IV-PA) watersheds. The area of proposed improvements is located inside the Water Supply Watershed boundary that drains to Little Cross Creek. WS-IV Watershed Protected Areas require

storm water detention with the treatment of 85% TSS (Total Suspended Solids). In addition, WS-IV requires that no development shall be more than 70% impervious. The pre-development state of the campus is 52% impervious. As the existing pervious pavement lots have met or exceeded their projected lifespan, they have been included in our calculations as impervious surfaces. The post-development state of the campus, after additional buildings, parking, roadways, and site amenities, will be ~55%. The campus will still remain under the 70% impervious threshold.

Based upon the new drainage areas associated with the campus improvements including the new industry training center, auto body annex, new roadways, and associated parking, two storm water BMP's (pond) would be required. The first storm pond would treat the auto annex building area, and would require an approximate surface area of 1,425 square feet. A much larger storm pond will be required to treat the industry training center, parking area, and roadway additions; this proposed pond will require a surface area of approximately 13,200 square feet.

The required treatment of 85% TSS can be accomplished using alternate BMP's that would require less space. With the campus being tight for space, underground treatment is an additional option. The existing topography and soil conditions would control whether this option is feasible. Please note that studies have shown that the cost of underground detention is in the range of six times.

- ***Earthwork*** – The topography in the immediate area of the proposed improvements is relatively flat. There is a large stand of existing pine trees that will need to be cleared and an existing gravel parking area that will need to be demolished to allow construction of the Industry Training Center and associated parking. There may be some monetary value to the stand of existing pine trees. The Owner may want to investigate having the trees timbered prior to clearing and grubbing activities.

  Based on the USGS topographic quadrangle map, the campus is on a ridge. The area is within a WS-IV Protected Water Supply Watershed boundary and drains to Hybarts Branch to the south and Little Cross Creek to the north. There does not appear to be a stream or wetlands in the immediate area of the proposed improvements.

- ***Off-site Roadway Improvements*** – Based on conversations with the City of Fayetteville and NCDOT, off-site roadway improvements could vary. The possibilities range from the following:
  1) The closure of the Skye Dr. entrance and the installation of a new entrance on Morganton Rd;
  2) No entrance at all onto Morganton Rd;
  3) Widening for dual lefts off of Morganton Rd. onto Skye Dr. and widening Skye Dr. to accept the dual lefts.

  The construction costs of the proposed improvements could cost between $500,000 and $750,000. Please note that the improvements are subject to review by NCDOT and the City of Fayetteville and depend on the final development, master plan and traffic conditions at that time. A traffic impact analysis (TIA) will be required to determine the scope of the actual improvements. The cost provided is subject to change based on existing conditions, right-of-way acquisition, utility relocation and any other site specific items.

FTCC

Fayetteville Technical Community College

Fayetteville, NC

ENGINEERING MASTER PLAN

Stanford White

QUALITY ENGINEERING | EXCEPTIONAL CLIENTS

Project # 0265-39-00-08

June 11, 2008

PO Box 19944 | Raleigh, NC 27619 | tel 919.832.8118 | fax 919.832.8120 | stanfordwhite.com

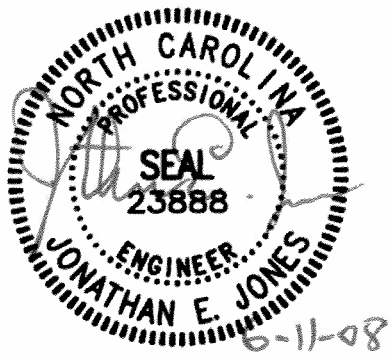
FTCC

Fayetteville Technical Community College

Fayetteville, NC

ENGINEERING MASTER PLAN

Mechanical



Electrical

Stanford White

QUALITY ENGINEERING | EXCEPTIONAL CLIENTS

Project # 0265-39-00-08

June 11, 2008

PO Box 19944 | Raleigh, NC 27619 | tel 919.832.8118 | fax 919.832.8120 | stanfordwhite.com

Summary

The engineered systems included in this master plan are:

PLUMBING
FIRE SPRINKLER
HVAC
ELECTRICAL
CENTRAL HVAC PLANTS

This engineering master plan is undertaken to evaluate existing building systems and to recommend modifications and/or replacements in order to improve and/or expand the function of these systems within the context of a future overall building renovation/addition project. This engineering master plan is intended to be used as a companion document for the architectural campus master plan separately prepared by MBAJ Architecture.

This engineering master plan was based on: 1) review of facility as-built drawings (where available); and 2) cursory field surveys of existing campus buildings. The survey of each building was brief, in that for the purposes of this master plan, a broad-based overview of facilities infrastructure conditions is all that is required. Only major engineering components were reviewed for condition and possible expansion/modification. Code compliance analysis was not included in this engineering master plan. Due to the broad nature of this master plan, field survey evaluations were based on visual observation to determine approximate age of the equipment and overall condition. These methods are not capable of identifying concealed or non-obvious conditions. This engineering master plan summarizes the existing infrastructure system types, age, condition, expandability, and includes a very basic opinion of construction cost for the system renovation/replacement recommendation.

Only facilities identified by MBAJ Architecture in FTCC's long range plan for additions or renovations are included in this engineering master plan. Accordingly, the facilities evaluated as part of this engineering master plan were limited to the following buildings on the main campus of Fayetteville Technical Community College in Fayetteville, NC:

Building Name	Year Constructed	Gross Area	Floors
Advanced Technology Center	1991	84,412	2
Center for Business & Industry	1988	31,770	1
Criminal Justice Center / Cosmetology	1964	16,201	1
Cumberland Hall	1976	78,168	2
Lafayette Hall	1961	58,929	1
Neill Currie Building	1961	10,532	1
Rand Student Center	1988	49,486	1
TOTALS (7 Buildings):		329,498	

Additionally, central HVAC plant systems on the main campus were reviewed in order to identify current connection points, capacities and opportunities for future expansions and connections.

Please understand that the cost opinions included in this engineering master plan study are our opinions of probable construction costs, and because we have no control over costs or the price of labor, equipment or materials, contractors' methods of determining bid prices, competitive bidding, market or negotiating conditions, we cannot warrant the accuracy of our cost opinion with regard to actual construction cost. Also, please note our Cost Breakdowns do not include any expenses necessary to identify, evaluate, handle or dispose of hazardous materials (asbestos, lead paint, *etc.*). Hazardous materials may exist where there is no reason to believe they could or should be present, therefore a detailed evaluation of hazardous materials should be made prior to any renovation projects. Hazardous material identification was not included in this engineering master plan.

END OF ENGINEERING INTRODUCTION SECTION

Summary

The BUILDING EVALUATIONS included herein are in tabular form referencing key components of the following systems:

PLUMBING
FIRE SPRINKLER
HVAC
ELECTRICAL

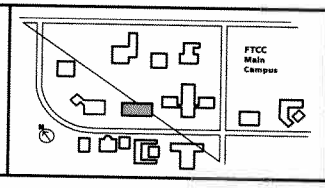
These BUILDING EVALUATIONS identify system types, age, general condition, expandability, and recommendations within the context of a future planned building renovation. Cost opinions are generalized and are based on current cost data (no future escalation has been applied). Evaluations are included herein for the following FTCC main campus facilities:

Advanced Technologies Center
Center for Business and Industry
Criminal Justice Center / Cosmetology
Cumberland Hall
Lafayette Hall
Neill Currie Building
Rand Student Center

Rand Student Center

Fayetteville Technical Community College

Current Function: Student Center
Location: Main Campus
Year Built: 1988
Age: 20
Total Area (GSF): 49,486
Floors: 1

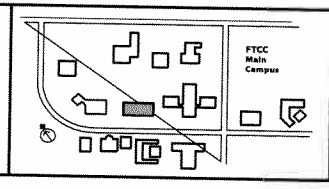


System	Type	Age	Condition	Expandability	Recommendation (assuming total building renovation)	Cost Equation	Cost
Plumbing							
Water service	2-1/2" building main, meter at street	20	Adequate, main building valve old	Some spare capacity	Replace main valve	LS	$ 5,000
Sanitary sewer service	4" mains exit three locations	20	OK	Some spare capacity			
Storm drainage	Flat roof drains	20	OK				
Piping	Water: copper with fiberglass insulation. Waste: assumed cast iron	20	Old		Replace	$2.5 per SF	$ 125,000
Toilets	Group	20	Dated, non-accessible per current code, high flow fixtures		Renovate to meet code (accessibility and low flow)	$3 per SF	$ 150,000
Other fixtures	Kitchen & misc. building sinks	20	Older but adequate		Replace	LS	$ 50,000
Hot water	Small local water heaters with re-circ pumps for building. (2) 250 gallon electric for kitchen.	varies	Varies		Replace, consider gas for kitchen units	LS	$ 25,000
Backflow prevention	Double check (Watts) in janitor closet	10+/-	Good, but does not meet code for building with kitchen (RPZ required)		Replace	LS	$ 5,000
Fuel	Natural gas, steel pipe	20	Old, serves kitchen equipment		Replace	LS	$ 7,500
Grease trap	Exterior below grade 500 gallons	20	Likely undersized by current standards		Replace	LS	$ 20,000
SUBTOTAL					7.83 $/SF		$ 387,500
Fire Sprinkler							
Description	None						
					Add if preferred or code-required	$3.5 per SF	$ 175,000
SUBTOTAL					3.54 $/SF		$ 175,000
HVAC							
Primary heating	4" Hot water from campus central plant (Mech Bldg)	20	OK	Some spare capacity			
Primary cooling	5" Chilled water from campus central plant (Mech Bldg)	20	OK	Some spare capacity			
Secondary systems	(12) Single Zone Constant Volume Air Handling Units, central station, 4-pipe	20	Old, poor zoning, no reheat, no humidity control		Replace with VAV system	$15 per SF	$ 750,000
Exhaust	Local toilet exhaust, various types	20	Old		Replace	$1 per SF	$ 50,000
Duct	Steel lined with fiberglass	20	Old, likely dirty given interior insulation		Replace	$4 per SF	$ 200,000
Pipe	CHW / HW: steel pipe, fiberglass insulation	20	Old		Replace	$4 per SF	$ 200,000
Ventilation	Minimum OA to air handling systems	20	Too small		Increase		
Economizer	Air - no.		Not compliant with current code		Add		
Kitchen Hood	Island-type, front compensating	20	Adequate, but flow issues		Replace along with fans	LS	$ 60,000
Controls	DDC main (Landis-Gyr 6000), pneumatic actuators	varies	OK		Upgrade DDC, replace pneumatic with electronic	$2 per SF	$ 100,000
SUBTOTAL					27.48 $/SF		$ 1,360,000

Rand Student Center

Fayetteville Technical Community College

Current Function: Student Center
Location: Main Campus
Year Built: 1988
Age: 20
Total Area (GSF): 49,486
Floors: 1

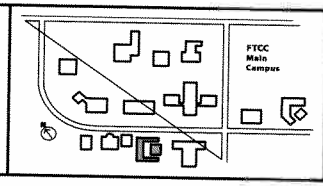


System	Type	Age	Condition	Expandability	Recommendation (assuming total building renovation)	Cost Equation	Cost
Electrical							
Service	208Y/120V, 1200A Square D I-line style service panel board	20	Adequate	Service Panel has limited pole space and capacity for significant load addition.Space for new equipment is limited	Replace and upgrade service.	$1 per SF	$ 50,000
Provider	PWC pad mounted transformer	20	Good	Limited	Transformer may need to upgraded by PWC if significant load is added		
Building secondary	Square D bolt-on style panelboards	varies	Marginal	Pole space is limited throughout the building.	Provide new panels and equipment connections as necessary to serve new loads	$4 per SF	$ 200,000
Generator	None				Provide a small 40kw generator to serve main campus telephone room and associated AC.	LS	$ 25,000
Fire alarm	Edwards Signal 5772 (hard wired)	20	Functional but does not meet current code.	Current System is not expandable.	Provide a new code compliant addressable system.	$2.5 per SF	$ 125,000
Emergency egress lighting	Self contained battery units. No exit discharge lights.	10 to 15	Batteries may be outside anticipated lifetime		Repair/replace emergency lights. Provide exit discharge lighting.	$0.75 per SF	$ 37,000
Technology	Category 5e.	7 to 10	Good. Additional service entrance conduit/cable is needed. Building has main campus telephone switch.	Yes. Physical space needed.	Provided additonal service duct bank and expand existing telephone closet.	$2.5 per SF	$ 125,000
Interior lighting	F40, T12 Troffers	20	Acceptable, but does not meet current energy code.	Current switching may need to be supplemented with occupancy sensors and lighting controls.	Replace lighting and controls.	$4 per SF	$ 200,000
Security	CCTV system, no card access system	5 to 10	Good. Current Main Campus Security located in this building, but it is to be moved to the Service Merchandise Building	System is expandable.	Add cameras.	$0.75 per SF	$ 37,000
Devices	Specification Grade	20	Good		Provide new/additional devices to correspond to renovations	$1 per SF	$ 50,000
Kitchen Provisions		15 to 20	Existing Kitchen Hood and associated power and fire alarm components are not up to current code.		Upgrade to current code.	LS	$ 30,000
SUBTOTAL					**17.76 $/SF**		**$ 879,000**
TOTAL					**56.61 $/SF**		**$ 2,801,500**

Cumberland Hall

Fayetteville Technical Community College

Current Function: Classrooms, Shops, Auditorium
Location: Main Campus
Year Built: 1976
Age: 32
Total Area (GSF): 78,168
Floors: 2

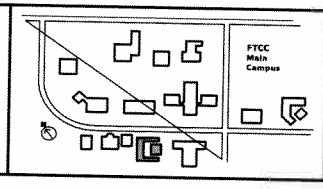


System	Type	Age	Condition	Expandability	Recommendation (assuming total building renovation)	Cost Equation	Cost
Plumbing							
Water service	2-1/2" building main	32	Adequate	Some spare capacity			
Sanitary sewer service	muliple mains exiting building	32	OK	Some spare capacity			
Storm drainage	Flat roof drains	32	OK				
Piping	Water: copper with fiberglass insulation. Waste: assumed cast iron	32	Old		Replace	$3 per SF	$ 234,000
Toilets	Group	32	Renovated toilets not too bad. Possible accesibility & low-flow issues		Renovate to meet code (accessibility and low flow)	$1.5 per SF	$ 120,000
Other fixtures	Misc. building sinks	32	Older but adequate		Replace	LS	$ 50,000
Hot water	Small local water heaters with re-circ pumps for building.	varies	Varies		Replace	LS	$ 20,000
Backflow prevention	(no evidence of one)				Provide	LS	$ 8,000
SUBTOTAL					5.53 $/SF		**$ 432,000**
Fire Sprinkler							
Description	None						
SUBTOTAL					Add if preferred or code-required	$3.5 per SF	$ 280,000
					3.58 $/SF		**$ 280,000**
HVAC							
Primary heating	5" Hot water from campus central plant Mech Bldg)	32	OK	Some spare capacity			
Primary cooling	6" Chilled water from campus central plant Mech Bldg)	32	OK	Some spare capacity			
Secondary systems	Hodge-podge of systems (Single zone fan coil units, multizone units, HW radiators)	32	Nearly all equipment is original		Replace with VAV system	$15 per SF	$ 1,200,000
Exhaust	Local toilet exhaust. Minimal shop exhaust.	32	Old		Replace and/or add	$1.5 per SF	$ 120,000
Duct	Lined	32	Old, likely dirty given interior insulation		Replace	$4 per SF	$ 316,000
Pipe	CHW / HW: steel pipe, fiberglass insulation	32	Old		Replace	$4 per SF	$ 316,000
Ventilation	Minimum OA to air handling systems	32	Too small		Increase		
Economizer	Air - no.	32	Not compliant with current code		Add		
Controls	DDC (Landis-Gyr), some electric	varies	OK		Upgrade DDC, replace electric with electronic	$2 per SF	$ 156,000
SUBTOTAL					26.97 $/SF		**$ 2,108,000**

Cumberland Hall

Fayetteville Technical Community College

Current Function: Classrooms, Shops, Auditorium
Location: Main Campus
Year Built: 1976
Age: 32
Total Area (GSF): 78,168
Floors: 2

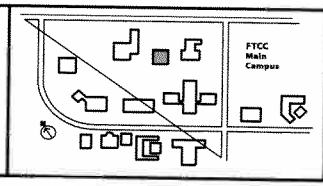


System	Type	Age	Condition	Expandability	Recommendation (assuming total building renovation)	Cost Equation	Cost
Electrical							
Service	Building Has (3) services - (480Y/277,800A, Federal Pacific), (208Y/120V Federal Pacific), (208Y/120V, Square D)	Varies	Varies from poor to marginal. Buiding is served from the same service lateral as the Chiller Plant and the Library.	Spare parts are no longer manufactured by Federal Pacific. Square D panel has limited pole space.	Provide a single service for the complete building, and separate service for chiller plant and library. Feed each building from a separate pad mounted transformer.	LS	$ 250,000
Provider	Services are fed from (2) PWC tranformer Vaults - One is adjacent to the chiller plant building and the other is inside of Auditorium building.	32	Poor - Obselete delivery method. Service to multiple buildings creates more significant outages.	Not expandable	Have PWC upgrade service transformers as part of renovations.		
Building secondary	Federal Pacific, Westinghouse, Square D	Varies	Poor to Good	Spare parts are no longer available for Federal Pacific Panels. Other panels have limited pole space.	Replace all Federal Pacific panels and add additional panels.	$4 per SF	$312,000
Generator	None				Generator not required		
Fire alarm	Simplex 4020	7	Acceptable - Coverage is not to current code.	Expandable	Expand to renovated areas.	$2 per SF	$ 156,000
Emergency egress lighting	Self contained battery lights. No exit discharge lights.	2	Good - coverage may need to be supplemented.		Add emergency lights (as necessary). Provide exit discharge lights.	$0.5 per SF	$ 39,000
Technology	Category 5e	5	Good - additonal outlets may be required.	Expandable - Additional trunk conduit and cable may be required	Provide new/additonal devices to correspond to renovations	$1.5 per SF	$ 117,000
Interior lighting	F34 T12, F32 T8, Incandescent	Varies	Marginal - Much of the lighting is not energy efficient some fixtures have conditional issues. The dimmer system in the auditorium is obselete.	Current switching may need to be supplemented with occupancy sensors and lighting controls.	Replace lighting and controls. Provide compact fluorescent fixuters and a new dimmer system in the Auditorium area.	$4 per SF	$ 312,000
Security	None				Provide a camera system similar to other buildings.	$1.5 per SF	$ 117,000
Devices	Specification Grade	20	Good		Provide new/additional devices to correspond to renovations	$1 per SF	$ 78,000
SUBTOTAL					**17.67 $/SF**		**$ 1,381,000**
TOTAL					**53.74 $/SF**		**$ 4,201,000**

Center for Business & Industry

Fayetteville Technical Community College

Current Function: Classrooms, Labs & Shops
Location: Main Campus
Year Built: 1988 (purchased & renovated)
Age: 20+
Total Area (GSF): 31,770
Floors: 1

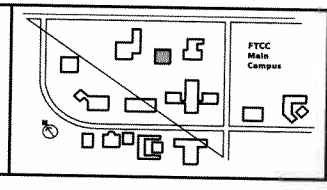


System	Type	Age	Condition	Expandability	Recommendation (assuming total building renovation)	Cost Equation	Cost
Plumbing							
Water service	2" building main, meter at street	20+	Adequate	Some spare capacity			
Sanitary sewer service	6" main to street	20+	OK	Some spare capacity			
Storm drainage	no piping (gutter)						
Piping	Water: copper with fiberglass insulation. Waste: assumed cast iron	20+	Old		Replace	$2.5 per SF	$ 80,000
Toilets	Group	20+	Dated, non-accessible per current code, high flow fixtures		Renovate to meet code (accessibility and low flow)	$3 per SF	$ 96,000
Other fixtures	Misc. building sinks	20+	Older but adequate		Replace	LS	$ 15,000
Hot water	Small local water heaters with re-circ pumps for building.	varies	Varies		Replace, consider single gas unit	LS	$ 15,000
Backflow prevention	Double check (Watts) in storage closet	20+	Good, but may not meet code for building with shops (RPZ required)		Replace	LS	$ 5,000
Fuel	Natural gas, steel pipe	20+	Old, serves HVAC equipment		Replace	LS	$ 5,000
Oil interceptor	500 gallons	20+	Evaluate need				
Waste oil storage	1,000 gallons	20+	Evaluate need				
SUBTOTAL					6.80 $/SF		$ 216,000
Fire Sprinkler							
Description	Wet-pipe, 8" main, backflow at street		Old		Replace branch piping and heads	$2.75 per SF	$ 90,000
SUBTOTAL					2.83 $/SF		$ 90,000
HVAC							
Primary heating	Gas-fired re-heat coils	20+	Old		Demolish and install HW boiler system		
Primary cooling	Rooftop condensing units	20+	Old		Demolish and connect to nearby chiller		
Secondary systems	(4) Single Zone Constant Volume Air Handling Units, central station	20+	Old, very poor zoning		Replace with 4-pipe VAV system	$15 per SF	$ 480,000
Exhaust	Local toilet exhaust, Limited shop exhaust	20+	Old, poorly performing		Replace toilet exhaust, add shop exhaust	$2 per SF	$ 64,000
Duct	Steel wrapped with fiberglass	20+	Old, appears dirty at grilles		Replace	$4 per SF	$ 128,000
Pipe	Copper refrigerant piping	20+	Old		Demolish, replace with 4-pipe system	$4 per SF	$ 128,000
Ventilation	Minimum OA to air handling systems	20+	Too small		Increase		
Economizer	Air - no.	20+	Not compliant with current code		Add		
Controls	some DDC and some electric	varies	OK		Upgrade DDC, replace electric with electronic	$2 per SF	$ 64,000
SUBTOTAL					27.20 $/SF		$ 864,000

Center for Business & Industry

Fayetteville Technical Community College

Current Function: Classrooms, Labs & Shops
Location: Main Campus
Year Built: 1988 (purchased & renovated)
Age: 20+
Total Area (GSF): 31,770
Floors: 1

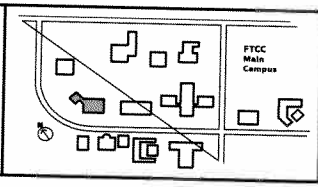


System	Type	Age	Condition	Expandability	Recommendation (assuming total building renovation)	Cost Equation	Cost
Electrical							
Service	480Y/277V, 800A and 480Y/277V, 1600A service. 800A service feeds a 500kva transformer that feeds a 208Y/120V, 1600A switchboard. GE equipment	20+	Acceptable	System is expandable	Provide new breakers in existing gear for new loads.	$1 per SF	$ 32,000
Provider	PWC Pad mounted transformer	20+	Acceptable				
Building secondary	GE Panelboards, Square D load Centers	Varies	Marginal	Limited pole space available, especially at the lower voltage	Provide new panels to serve new loads	$3 per SF	$ 96,000
Generator	None				Generator not required		
Fire alarm	Pyrotronics CP-4 (hardwired)	20+	Poor - Coverage not to current code.	Panel is obsolete.	Provide a new code compliant addressable system	$2.5 per SF	$ 80,000
Emergency egress lighting	Self contained battery lights. No exit discharge lights.	2	Good - coverage may need to be supplemented.		Add emergency lights (as necessary). Provide exit discharge lights.	$0.5 per SF	$ 16,000
Technology	Category 5	10	Marginal - Additional outlets may be required	Yes, Additonal trunk conduit and cable may be required.	Provide additonal outlets, trunk conduit and cabling	$1.5 per SF	$ 48,000
Interior lighting	F40 T12, Compact fluorescent retrofitted in incandescent fixtures.	20+	Poor to Marginal - Fxtures not energy efficient.	Current switching may need to be supplemented with occupancy sensors and lighting controls.	Replace lighting and controls.	$3 per SF	$ 96,000
Security	None				Provide camera system similar to other buildings.	$1.5 per SF	$ 48,000
Devices	Commercial	20+	Marginal		Provide new/additional devices to correspond to renovations	$1 per SF	$ 36,000
SUBTOTAL					**14.23 $/SF**		**$ 452,000**
TOTAL					**51.05 $/SF**		**$ 1,622,000**

Advanced Technologies Center

Fayetteville Technical Community College

Current Function: Computer Science & Automotive
Location: Main Campus
Year Built: 1991
Age: 17
Total Area (GSF): 84,412
Floors: 1 & 2

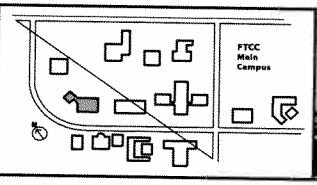


System	Type	Age	Condition	Expandability	Recommendation (assuming total building renovation)	Cost	Cost
Plumbing							
Water service	4" building main, meter at street	17	OK	Some spare capacity			
Sanitary sewer service	6" main	17	OK	Some spare capacity			
Storm drainage	Flat roof drains	17	OK				
Piping	Water: copper with fiberglass insulation. Waste: assumed cast iron	17	OK		Replace as per renovation	$1.5 per SF	$ 127,000
Toilets	Group	17	OK, likely some accessibility issues per current code, high flow fixtures		Renovate to meet code (accessibility and low flow)	$2 per SF	$ 168,000
Other fixtures	Misc. building sinks	17	OK, likely some accessibility issues per current code, high flow fixtures		Renovate to meet code (accessibility and low flow)	LS	$ 25,000
Hot water	Small local water heaters with re-circ pumps for building.	varies	Varies		Replace as needed.	LS	$ 8,000
Backflow prevention	RPZ at street	17	OK, but may not meet current local		Renovate to meet local ordinance	LS	$ 7,000
Fuel	Natural gas, steel pipe	17	OK, serves boiler		Replace as needed.	LS	$ 5,000
Air compressor	Serves auto shop	17	OK		Renovate as needed	LS	$ 5,000
Oil interceptor	Exterior below grade	17	Condition unknown				
SUBTOTAL					**4.09 $/SF**		**$ 345,000**
Fire Sprinkler							
Description	None						
SUBTOTAL					Add if preferred or code-required	$3.5 per SF	$ 300,000
					3.55 $/SF		**$ 300,000**
HVAC							
Primary heating	Cast iron HW boiler (Weil-McClain), pumps	17	OK	Some spare capacity			
Primary cooling	Water cooled chiller (Carrier), cooling tower (BAC), pumps	17	Showing some age, efficiencies less than modern equipment	Some spare capacity	Retain until failure		
Secondary systems	Central station, 4-pipe, air handling units: (3) constant volume - shop; (4) VAV - CR building. FP VAV Terminal w/ HW reheat. Mechanical room plenum.	17	OK, except mechanical room plenum code violation, and some systems undersized for computer labs.		Replace as per renovation. Fix mechanical room plenum. Increase system capacities where necessary.	$11 per SF	$ 930,000
Exhaust	Local toilet exhaust. Minimal shop exhaust.	17	Inadequate shop exhaust.		Improve toilet exhaust where needed. Add shop exhaust.	$1.5 per SF	$ 128,000
Duct	Lined	17	Dirty given interior insulation		Replace	$4 per SF	$ 340,000
Pipe	CHW / HW: steel pipe, fiberglass insulation	17	OK		Replace as per renovation	$2.5 per SF	$ 215,000
Ventilation	Minimum OA to air handling systems	17	OK				
Economizer	Air - no. Water - yes.	17			Consider adding air economizer.	LS	$ 70,000
Computer room AC	Split system downflow (raised floor)	17+	Adequate		Upgrade when needed		
Controls	DDC main (Landis-Gyr 6000)	varies	OK		Upgrade DDC as necessary	$1 per SF	$ 85,000
SUBTOTAL					**20.94 $/SF**		**$ 1,768,000**

Advanced Technologies Center

Fayetteville Technical Community College

Current Function: Computer Science & Automotive
Location: Main Campus
Year Built: 1991
Age: 17
Total Area (GSF): 84,412
Floors: 1 & 2

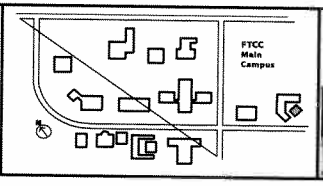


System	Type	Age	Condition	Expandability	Recommendation (assuming total building renovation)	Cost	Cost
Electrical							
Service	480Y/277V, 2000A, Square D QED Style Switchboard.	17	Good	Pole space is limited in main switchboard.	Upgrade existing service.	$1 per SF	$ 85,000
Provider	PWC pad mounted transformer	17	Acceptable	System is expandable	N/A		$ -
Building secondary	Square D bolt-on style panelboards	17	Good	Due to limited pole space additional panelboards will have to be provided as part of any renovation	Provide additional panelboards and equipment connections to serve new loads	$5 per SF	$ 422,000
Generator	100 KW Generac Interior Diesel Generator	17	Poor - Generator is no longer functional or connected to campus server loads. Multiple ATS's will have to be provided for "Life Safety" and "Standby" (computer loads).	No	Provide minimum 300 KW generator and associated power distribution components to serve Life safety loads, main server room electrical equipment, and main computer room Air Conditioning loads.	LS	$ 135,000
UPS	Powerware 315 (40kw), Leibert (40 kw)	varies	Functional	UPS intended to serve main campus server room is supplemented by an additional UPS that also serves other areas of the building	Provide a larger 80 kw UPS dedicated to the main server room. Retain other UPS's to serve remaining areas of the building. Install in appropriately cooled areas.	LS	$ 120,000
Fire alarm	Simplex 4100U (currently being installed)	0	Brand New	Yes	Expand as required.	$2.0 per SF	$ 170,000
Emergency egress lighting	Self Contained battery units. No exit discharge lights	10 to 15	Batteries may be outside anticipated lifetime	N/A	Repair/replace emergency lights. Provide exit discharge lighting.	$0.75 per SF	$ 64,000
Technology	Category 5e	varies	Marginal - Building includes main campus server room which has capacity issues (see Generator and UPS) and the need for additonal pathway and entrance cabling.	Ample space for additional server equipment.	Provided additonal ductbank and cable to expand connection to existing campus wide area network. Provide electrical connections to computer room suppression	$3.25 per SF	$ 275,000
Interior lighting	F40,T12 Fluorescent	17	Marginal - does not meet current energy code, many fixtures look old and dirty. Fixtures in auto shop need to be enclosed.	Current lighting controls may need to be supplemented with occupancy sensors and other lighting controls.	Replace lighitng and controls.	$3 per SF	$ 253,000
Security	Altronix (CCTV), Schlage (Card access system)	5 to 10	Good	Yes	Expand existing systems.	$1 per SF	$ 84,000
Devices	Specification Grade	17	Marginal	Some devices showed reasonable wear. Devices in auto shop need to be greater than 36" above floor.	Provide new/additional devices to to correspond to renovations	$1 per SF	$ 84,000
SUBTOTAL					**14.04 $/SF**		**$ 1,185,000**
TOTAL					**42.62 $/SF**		**$ 3,598,000**

Neill Currie Building

Fayetteville Technical Community College

Current Function: Offices & 3D Classroom
Location: Main Campus
Year Built: 1961
Age: 47
Total Area (GSF): 10,532
Floors: 1

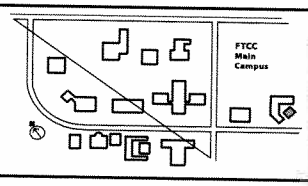


System	Type	Age	Condition	Expandability	Recommendation (assuming total building renovation)	Cost Equation	Cost
Plumbing							
Water service	2" building main in mechanical room (origin unknown)	47	Adequate, service header old	Some spare capacity	Replace header and valves	LS	$ 6,000
Sanitary sewer service	4" main	47	OK	Some spare capacity			
Storm drainage	Flat roof drains	47	OK				
Piping	Water: copper with fiberglass insulation. Waste: assumed cast iron	47	Old		Replace	$2.5 per SF	$ 27,000
Toilets	Group	47	Dated, non-accessible, high flow fixtures		Renovate to meet code (accessibility and low flow)	$3.5 per SF	$ 36,000
Other fixtures	Misc. building sinks	47	Old		Replace	LS	$ 10,000
Hot water	Small local water heater with re-circ pump for building.	15+/-	Old		Replace	LS	$ 4,000
Backflow prevention	(no evidence of one)				Provide	LS	$ 5,000
SUBTOTAL					8.36 $/SF		**$ 88,000**
Fire Sprinkler							
Description	None				Add if preferred or code-required	$4 per SF	$ 42,000
SUBTOTAL					3.99 $/SF		**$ 42,000**
HVAC							
Primary heating	Hot water from boiler plant Continuing Ed Center)	47	OK	Some spare capacity			
Primary cooling	Chilled water from chiller plant Continuing Ed Center)	47	OK	Some spare capacity			
Secondary systems	(4) Single Zone Constant Volume Air Handling Units, central station, 4-pipe, (2) exterior, (2) interior	5	New units, zoning could be better		Retain units and replace duct, Adjust units per renovations.	$4 per SF	$ 44,000
Exhaust	Local toilet exhaust	47	Old		Replace	$1 per SF	$ 11,000
Duct	Steel - some lined, some wrapped. Most located in crawl space.	varies	Combination old & new.		Replace all	$4 per SF	$ 44,000
Pipe	CHW / HW: steel pipe, fiberglass insulation	varies	Combination old & new.		Replace old	$2 per SF	$ 22,000
Ventilation	Minimum OA to air handling systems	47	OK				
Economizer	Air - no.	47	Recommended, but not required by current code		Add	LS	$ 20,000
Controls	DDC main (Siemens)	varies	OK		Upgrade DDC	$2 per SF	$ 22,000
SUBTOTAL					15.48 $/SF		**$ 163,000**

Neill Currie Building

Fayetteville Technical Community College

Current Function: Offices & 3D Classroom
Location: Main Campus
Year Built: 1961
Age: 47
Total Area (GSF): 10,532
Floors: 1

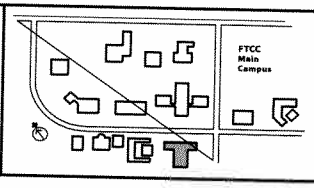


System	Type	Age	Condition	Expandability	Recommendation (assuming total building renovation)	Cost Equation	Cost
Electrical							
Service	240V/120V High Leg Delta, 600A	3	Good	Voltage configuration is obselete and can be hazardous.	Provide new 208Y/120V, service with capacity to serve new renovations.	LS	$ 48,000
Provider	PWC pole mounted transformer bank	47	Acceptable	Not expandable	Replace Service		$ -
Building secondary	Seimens, ITE, Square D Panelboards	varies	Poor to Marginal	Limited pole space, obselete panelboards	Provide new panelboards and equipment conections throughout renovated areas	$4.5 per SF	$ 45,000
Generator	None						
Fire alarm	Notifier AFP 400	7	Good. Need smoke Evacuation system in connector between Neil Currie and Continuing Ed. Building.	System is expandable	Expand existing system.	$2.5 per SF	$ 25,000
Emergency egress lighting	Self Contained battery units. No exit discharge lights.	10 to 15	Batteries may be outside anticipated lifetime	N/A	Repair/replace emergency lights. Provided exit discharge lighting.	$0.75 per SF	$ 8,000
Technology	Category 5	varies	Marginal - Number of data outlets are minimal.	Expandable, Need additional trunk conduit and cable and additional outlets.	Provide new data and equipment	$3 per SF	$ 30,000
Interior lighting	F40, T12 Fluorescent, F32, T8, Incandescent	varies	Poor to Good. Not energy efficient.	Current switching may need to be supplemented with occupancy sensors and lighting controls.	Replace most of the lighting and controls.	$3 per SF	$ 30,000
Security	Altronix - CCTV (Currently being expanded). Schlage - Card Access	0	Good	System is expandable	Expand existing system. (If necessary)	$.25 per SF	$ 2,500
Devices	Specification Grade	varies	Good		Provide new/additional devices to to correspond to renovations	$1 per SF	$ 10,000
SUBTOTAL					18.85 $/SF		$ 198,500
TOTAL					46.67 $/SF		$ 491,500

Lafayette Hall

Fayetteville Technical Community College

Current Function: Sciences, Shops, Offices
Location: Main Campus
Year Built: 1961
Age: 47
Total Area (GSF): 58,929
Floors: 1

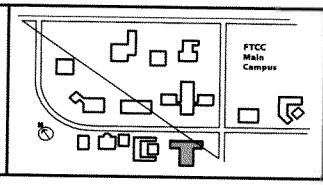


System	Type	Age	Condition	Expandability	Recommendation (assuming total building renovation)	Cost Equation	Cost
Plumbing							
Water service	4" building main	47	Adequate, main building valve old	Some spare capacity			
Sanitary sewer service	6" main	47	OK	Some spare capacity			
Storm drainage	Flat roof drains	47	OK				
Piping	Water: copper with fiberglass insulation. Waste: assumed cast iron	47	Old		Replace	$3 per SF	$ 180,000
Toilets	Group	47	Dated, non-accessible per current code, high flow fixtures		Renovate to meet code (accessibility and low flow)	$3 per SF	$ 180,000
Other fixtures	Misc. building sinks & lab/shop plumbing.	47	Older but adequate		Replace as needed.	LS	$ 40,000
Hot water	Central water heater with re-circ pump		Suspect		Replace	LS	$ 10,000
Backflow prevention	(no evidence of one)				Provide	LS	$ 8,000
Fuel	Natural gas, steel pipe	47	serves boilers, labs		Replace as per renovation needs	LS	$ 8,000
Acid waste system	Serves labs				Replace as per renovation needs	LS	$ 8,000
Air compressor	Serves shops				Replace upon failure		
SUBTOTAL					7.36 $/SF		$ 434,000
Fire Sprinkler							
Description	None						
					Add if preferred or code-required	$3.5 per SF	$ 210,000
SUBTOTAL					3.56 $/SF		$ 210,000
HVAC							
Primary heating	Pulse combustion HW boilers (Fulton)	15	Adequate	Some spare capacity	Retain until failure		
Primary cooling	Water cooled chiller (McQuay), cooling tower (BAC), pumps	20+/-	Showing some age, efficiencies less than modern equipment	Some spare capacity	Retain until failure		
Secondary systems	Mostly 4-pipe (some split systems). Constant Volume Air Handling Units (shops, some labs, some offices). Unit ventilators (classrooms).	varies	Recently replaced units are OK. Classroom unit ventilators original equipment - poorly performing.		Replace with VAV systems, except recently renovated labs.	$13 per SF	$ 780,000
Exhaust	Local toilet exhaust, various types. Minimal shop exhaust.	varies	Mostly old		Replace and/or add	$2 per SF	$ 120,000
Duct	Steel, mostly lined.	varies	Likely dirty where interior insulation		Replace old duct	$3 per SF	$ 180,000
Pipe	CHW / HW: steel pipe, fiberglass insulation	varies	Original pipe is very old		Replace old pipe/insulation	$3 per SF	$ 180,000
Ventilation	Minimum OA to air handling systems	varies	Too small		Increase		
Economizer	Air - no.	varies	Not compliant with current code		Add		
Welding hoods	booth type	?	Adequate, but possible flow issues		Upgrade as needed	LS	$ 20,000
Controls	DDC with some electric	varies	OK		Upgrade DDC, replace electric with electronic	$2 per SF	$ 120,000
SUBTOTAL					23.76 $/SF		$ 1,400,000

Lafayette Hall

Fayetteville Technical Community College

Current Function: Sciences, Shops, Offices
Location: Main Campus
Year Built: 1961
Age: 47
Total Area (GSF): 58,929
Floors: 1

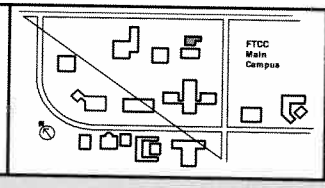


System	Type	Age	Condition	Expandability	Recommendation (assuming total building renovation)	Cost Equation	Cost
Electrical							
Service	Building has (2) services - (208Y/120V,1600A, GE Switchboard), (208Y/120V,1000A Square D panelboard)	varies	Poor to Acceptable - The GE switchboard is past its anticipated lifetime.	Limited	Provide a new service that combines the existing services.	$1.5 per SF	$ 90,000
Provider	(2) PWC pad mounted transformers	varies	Acceptable	Limited	Provide a new transformer large enough for complete building.		
Building secondary	GE panelboards, Square D Panelboards, Square D load centers	varies	Poor - Most panels are in need of replacement. There are a lot of panels due to the amount of shop equipment.	Not Expandable	Replace panels as part of renovations.	$6 per SF	$ 360,000
Generator	None				Generator not required		
Fire alarm	Simplex 4100U (Currently being installed)	0	Brand New	Yes	Extend to renovated areas	$1 per SF	$ 60,000
Emergency egress lighting	Self contained battery lights. Some remote head exit discharge lights.	2	Marginal - Coverage will need to be supplemented.	N/A	Add emergency lights (as necessary). Provide exit discharge lights.	$0.5 per SF	$ 30,000
Technology	Category 5e	5	Good - additonal outlets may be required.	Expandable - Additional trunk conduit and cable may be required	Provide new/additonal devices to correspond to renovations	$1 per SF	$ 60,000
Interior lighting	F40 T12, F32 T8	varies	Poor to Good - Most of the building has non energy efficient fixtures in poor condition. Daylighting in corridors provides an opportunity for photocell control.	Current lighting controls may need to be supplemented with occupancy sensors and other lighting controls.	Provide new lighting and controls	$4 per SF	$240,000
Security	None				Provide camera system similar to other buildings.	$1.5 per SF	$ 90,000
Devices	Specification Grade	varies	Good		Provide new/additional devices to to correspond to renovations	$1 per SF	$ 60,000
SUBTOTAL					**16.80 $/SF**		**$ 990,000**
TOTAL					**51.49 $/SF**		**$ 3,034,000**

Criminal Justice Center / Cosmetology

Fayetteville Technical Community College

Current Function: Criminal Justice / Cosmetology
Location: Main Campus
Year Built: 1964 (FTCC purchased 2003)
Age: 44
Total Area (GSF): 16,201
Floors: 1



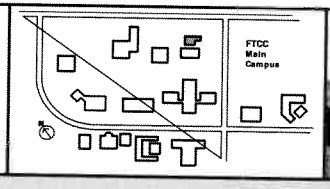
NOTE: This evaluation sheet includes information which assumes completion of the CJC / Cosmetology renovation (80% of building) due by the end of 2008

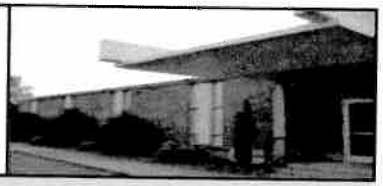
System	Type	Age	Condition	Expandability	Recommendation	Cost Equation	Cost
Plumbing							
Water service	2-1/2" main from street to mech room	44	OK	Limited			
Sanitary sewer service	6" main to street	44		Some spare capacity			
Storm drainage	Flat roof drains	44	OK				
Piping	Water: copper with fiberglass insulation. Waste: assumed cast iron	0-44	OK		Minor reno for remaining 20% of bldg.	LS	$ 16,000
Toilets	Group toilets renovated 2008	0	OK				
Other fixtures	Misc sinks / Cosmetology plumbing	0	OK				
Hot water	Gas, atmospheric	10+/-	OK				
Backflow prevention	Exterior in enclosure above grade	5	OK				
Fuel	Natural gas (boiler)		OK				
SUBTOTAL					0.99 $/SF		$ 16,000
Fire Sprinkler							
Description	None						
					Add if preferred or code-required	$3.50 per SF	$ 57,000
SUBTOTAL					3.52 $/SF		$ 57,000
HVAC							
Primary heating	Cast Iron Hot Water Boiler (atmospheric)	4	OK	Sections could be added if needed			
Primary cooling	New 3" CHW from CBI Chiller Plant	0	OK	Limited			
Secondary systems	New 4-pipe VAV, 3 AHU's	0	OK	More flexible than expandable	Minor reno for remaining 20% of bldg.	LS	$ 81,000
Exhaust	New	0	OK				
Duct	Mostly new, all wrapped	0	OK				
Pipe	New CHW / HW: steel pipe, fiberglass	0	OK				
Ventilation	New	0	OK				
Economizer	Air-yes, Water-no	0	OK				
Controls	New DDC	0	OK				
					Minor reno for remaining 20% of bldg.	LS	$ 8,000
SUBTOTAL					5.49 $/SF		$ 89,000

Criminal Justice Center / Cosmetology

Fayetteville Technical Community College

Current Function: Criminal Justice / Cosmetology
Location: Main Campus
Year Built: 1964 (FTCC purchased 2003)
Age: 44
Total Area (GSF): 16,201
Floors: 1





NOTE: This evaluation sheet includes information which assumes completion of the CJC / Cosmetology renovation (80% of building) due by the end of 2008

System	Type	Age	Condition	Expandability	Recommendation	Cost Equation	Cost
Electrical							
Service	208Y/120V, 600A, Square D panelboard	1	Good	Limited	Provide a new service is load is increased significantly	LS	$ 24,000
Provider	PWC 500 kva transformer	15	Acceptable	Expandable	Connect new service to exist. transformer if load increases		
Building secondary	ITE and Square D panelboards	varies	Older panels need to be replaced	Limited	Replace remaining older panels	LS	$ 16,000
Generator	None				Generator not required		
Fire alarm	Edwards EST2	1	Good	Yes	Expand to renovated areas	LS	$ 8,000
Emergency egress lighting	Self-Contained battery lights and remote head exit discharge lights	1	Good	Yes	Only add if egress path changes	LS	$ 1,600
Technology	Category 5E	5	Good	Yes	Expand to new areas	LS	$ 4,000
Interior lighting	F32 T8 and F40 T12 Fluorescent, incandescent	Varies	Poor to Good	Current lighting controls may need to be expanded to new areas	Provide new energy efficient lighting in new areas	LS	$ 8,000
Security	None	N/A	N/A	N/A	Provide CCTV similar to other buildings.	LS	$ 24,000
Devices	Specification Grade	varies	Poor to Good, unrenovated spaces need additional outlets.	Yes	Provide new/additional devices to to correspond to renovations	LS	$ 4,000
SUBTOTAL					**5.53**	**$/SF**	**$ 89,600**
TOTAL					**15.53**	**$/SF**	**$ 251,600**

Introduction

Central HVAC plants are identified as boiler and chiller systems that provide heating and cooling utilities respectively for facilities, typically more than one building. Sometimes referred to as district utilities, the heating medium is often either steam or hot water, while the cooling medium is generally chilled water. FTCC has historically utilized a central plant approach for their main campus facilities. FTCC understands and appreciates the added benefits of central HVAC plant systems, most notably improved efficiency, redundancy, life cycle cost, allowances for diversity and economies of scale. Future facility additions and expansions on the main campus should be, in part, contemplated within the context of the viability of extending or expanding existing central HVAC plant systems already on campus. To assist with those future efforts, existing central cooling and heating systems are summarized below.

Cooling

The following is a breakdown of estimated building cooling loads and system types at significant facilities within core areas of the main campus.

Building Name	Year Built	Gross Area (SF)	Tons (estimate)	SF/TON (estimate)	Type (current)	Remarks
Thompson Learning Resource Center	1971	36,005	111	325	Central CHW Plant	1
McLean Administration Building	1973/99	17,027	49	350		
Cumberland Hall	1976	78,168	241	325		
Rand Student Center	1988	49,486	152	325		
Shaw Virtual College Center	2005	48,766	150	325		
Horace Sisk Building	1964	53,925	154	350	Central CHW Plant	2
Culinary Dining	1964	15,786	53	300		
Gymnasium	1964	19,995	67	300		
Continuing Education Center	1996	75,221	215	350	Central CHW Plant	3
Neill A. Currie Building	1961	10,532	30	350		
Center for Business & Industry (CBI)	1988	31,770	91	350	Central CHW Plant	4
Criminal Justice Center #1 (CJC / Cosmetology)	1964	16,201	54	300		
Criminal Justice Center #2 (YMCA)		31,304	104	300		
General CR Building (Service Merchandise)	1973	70,000	200	350	CHW	5
Lafayette Hall	1961	58,929	181	325	CHW	6
Advanced Technology Center	1991	84,412	281	300	CHW	7
Health Technologies Center	1998	66,500	205	325	CHW	8
Early Childhood Education Center	2001	30,597	87	350	CHW	9

Notes:

1. CHW piping feeds to each building from separate central plant building. 2 water-cooled chillers. 550 tons plant capacity.
2. CHW piping feeds to each building from central plant in Gymnasium. 2 air-cooled chillers. 300 tons plant capacity.
3. CHW piping feeds to each building from central plant in Continuing Ed. Building. 1 water-cooled chiller. 205 tons plant capacity.
4. Central plant concept installed at CBI. 1 air-cooled chiller. 125 tons plant capacity. CJC#1 only connection thus far. Plant capacity will support future connection to CJC#2 or CBI.
5. Building design underway. System type undecided.
6. 2 water-cooled chillers. 250 ton plant capacity.
7. 1 water-cooled chiller. 240 ton.
8. 1 water-cooled chiller. 125 ton.
9. 2 air-cooled chiller. 100 ton plant capacity.

Heating

The following is a breakdown of estimated building heating loads and system types at significant facilities within core areas of the main campus.

Building Name	Year Built	Gross Area (SF)	MBH (estimate)	BTU/SF (estimate)	Type (current)	Remarks
Thompson Learning Resource Center	1971	36,005	1,440	40	Central HW Plant	1
McLean Administration Building	1973/99	17,027	681	40		
Cumberland Hall	1976	78,168	3,127	40		
Rand Student Center	1988	49,486	1,979	40		
Shaw Virtual College Center	2005	48,766	1,951	40		
Horace Sisk Building	1964	53,925	2,157	40	Central HW Plant	2
Culinary Dining	1964	15,786	631	40		
Gymnasium	1964	19,995	800	40		
Continuing Education Center	1996	75,221	3,009	40	Central HW Plant	3
Neill A. Currie Building	1961	10,532	421	40		
Center for Business & Industry	1988	31,770	1,271	40	Gas HVAC	4
Criminal Justice Center #1 (CJC / Cosmetology)	1964	16,201	648	40	Central HW Plant	5
Criminal Justice Center #2 (YMCA)		31,304	1,252	40		
General CR Building (Service Merchandise)	1973	70,000	2,800	40	HW	6
Lafayette Hall	1961	58,929	2,357	40	HW	7
Advanced Technology Center	1991	84,412	3,376	40	HW	8
Health Technologies Center	1998	66,500	2,660	40	HW	9
Early Childhood Education Center	2001	30,597	1,224	40	HW	10

Notes:

1. HW piping feeds to each building from separate central plant building. 2 cast iron boilers. 9,400 MBH plant capacity.
2. HW piping feeds to each building from central plant in Culinary Dining. 1 cast iron boiler. 3,200 MBH plant capacity.
3. HW piping feeds to each building from central plant in Continuing Ed. Building. 1 cast iron boiler. 4.400 MBH plant capacity.
4. Duct mounted gas heaters.
5. HW piping feeds to each building from central plant in #1 building. 1 cast iron boiler. 3,900 MBH plant capacity.
6. Building design underway. System type undecided.
7. 3 pulse combustion boiler. 2,600 MBH plant capacity.
8. 1 cast iron boiler. 3,600 MBH.
9. 1 cast iron boiler. 2,400 MBH.
10. 1 cast iron boiler. 2,200 MBH.

END OF CENTRAL HVAC PLANTS SECTION

APPENDIX C

Current Space Assessments with Future Projections

Projected Space Assessments

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
FACILITIES UTILIZATION STUDY

Program/Service Area	Building																					Totals
	Lafayette Hall	Cumberland Hall	Thompson Library	Administration Building	Horace Sisk Building	Neill A. Currie Building	Student Center	Center for Bus. & Ind.	Adv. Technology Center	Continuing Ed. Center	Health Tech. Center	Plant Operation Shop	Early Childhd. Ed. Center	Virtual College Center	Spring Lake Center	Horticulture Educational Center	Criminal Justice Center	Military Business Center	Auto Body Repair Complex	Cultural Resource Center	Art Department Complex	
Curriculum:																						
Building Trades	0	9784	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**9,784**
Business Programs	0	2,913	0	0	563	0	0	0	5,996	0	0	0	0	0	0	0	0	0	0	0	0	**9,472**
Advertising & Graphics Technolo	0	0	0	0	2,746	0	0	0	0	0	0	0	0	5,153	0	0	0	0	0	0	2,273	**10,172**
Culinary Technology	0	0	0	0	8,660	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**8,660**
Early Childhood Education	0	0	0	0	0	0	0	0	0	0	0	0	7,256	0	0	0	0	0	0	0	0	**7,256**
Engineering Technology	23,715	1,659	0	0	465	0	0	0	13,132	0	0	0	0	0	0	0	0	0	0	0	0	**38,971**
Funeral Service Education	0	3,464	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**3,464**
General Studies	0	15,890	0	0	124	5,312	0	22,764	20,301	0	8,948	0	0	3,636	39,729	3,157	5,675	0	0	2,415	0	**127,951**
Health Programs	0	0	0	0	0	0	0	0	0	0	31,804	0	0	0	12,617	0	0	0	0	0	0	**44,421**
Horticultural Technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,831	0	0	0	0	0	**6,831**
Industrial Technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,418	0	0	0	0	0	0	**6,418**
Laboratory Sciences	11,944	1,415	0	0	0	0	0	0	0	0	0	0	0	0	10,548	0	0	0	0	0	0	**23,907**
Criminal Justice	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,918	0	0	0	0	**2,918**
Math/English/Social Sciences	3,477	14,179	0	0	26,135	0	0	0	2,782	0	0	0	0	0	0	0	0	0	0	0	0	**46,573**
Transportation Technology	0	0	0	0	0	0	0	0	9,921	0	0	0	0	0	0	0	0	0	6,133	0	0	**16,054**
Military Business	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1214	0	0	0	**1,214**
Digital Media	0	0	0	0	0	1,836	0	0	0	0	0	0	0	3,974	0	0	0	0	0	0	0	**5,810**
Continuing Education:																						
Basic Skills Education	0	0	0	0	0	0	0	0	0	26,936	0	0	0	0	6,410	0	0	0	0	0	0	**33,346**
General Services	0	0	0	0	0	0	0	0	0	21,006	0	0	0	0	8,446	0	0	0	0	0	0	**29,452**
Administration:																						
Administrative Services	15,812	4614	84	2,305	5,381	102	8,825	0	6,431	0	0	4,515	11,471	3,504	6,399	171	0	0	0	0	0	**69,614**
Financial Services	592	262	0	8,776	0	0	7,010	435	0	1,921	895	5,625	0	0	2,262	116	0	0	0	0	0	**27,894**
Student Services	0	0	355	0	0	0	14,816	0	0	0	0	0	0	171	2,778	0	0	0	0	0	0	**18,120**
President's Office	0	0	0	1,741	0	0	1,538	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**3,279**
Learning Resources	0	408	19,242	0	0	0	0	311	192	444	401	0	0	11,257	0	0	0	0	0	0	0	**32,255**
Institutional Advancement	0	0	0	1,354	0	0	0	0	0	0	0	0	0	725	0	0	0	0	0	0	0	**2,079**
General:																						
Maintenance/Storage/Custodial	515	806	188	236	4,254	382	171	203	330	140	395	0	321	1,082	2,112	218	1,736	33	436	10	0	**13,568**
Renovation/Unassigned	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**-**
TOTALS* (net s.f.)	56,055	55,394	19,869	14,412	48,328	7,632	32,360	23,713	59,085	50,447	42,443	10,140	19,048	29,502	97,719	10,493	10,329	1,247	6,569	2,425	2,273	599,483

(* academic & service areas only - does not include building support areas, walls, circulation, etc.)

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
FACILITIES MASTER PLAN STUDY

Current Space Assessment Summary

Program/Service Area	Year 2008			Year 2012		
	Current Space (actual) (s.f.)	Current Space Need (actual + needed) (s.f.)	Current Space Deficit (needed - actual)	Growth Factor 2012	Projected Space Need 2012 (s.f.)	Projected Space Deficit 2012 (s.f.)
Curriculum:						
Building Trades	9,784	9,784	0	1.1152	10,911	1,127
Business Programs	9,472	9,472	0	1.1152	10,563	1,091
Advertising & Graphics Technology	10,172	10,972	800	1.1152	12,236	2,064
Culinary Technology	8,660	8,660	0	1.1152	9,658	998
Early Childhood Education	7,256	7,256	0	1.1152	8,092	836
Engineering Technology	38,971	38,971	0	1.1152	43,460	4,489
Funeral Service Education	3,464	3,464	0	1.1152	3,863	399
General Studies	127,951	159,911	31,960	1.1152	178,333	50,382
Health Programs	44,421	51,721	7,300	1.1152	57,679	13,258
Horticultural Technology	6,831	6,831	0	1.1152	7,618	787
Industrial Technology	6,418	6,418	0	1.1152	7,157	739
Laboratory Sciences	23,907	34,907	11,000	1.1152	38,928	15,021
Criminal Justice	2,918	4,918	2,000	1.1152	5,485	2,567
Math/English/Social Sciences	46,573	46,573	0	1.1152	51,938	5,365
Transportation Technology	16,054	22,254	6,200	1.1152	24,818	8,764
Military Business	1,214	1,214	0	1.1152	1,354	140
Digital Media	5,810	8,210	2,400	1.1152	9,156	3,346
Continuing Education:						
Basic Skills Education	33,346	33,346	0	1.1280	37,614	4,268
General Services	29,452	40,252	10,800	1.1293	45,457	16,005
Administration:						
Administrative Services	69,614	84,874	15,260	1.1152	94,651	25,037
Financial Services	27,894	37,244	9,350	1.1152	41,535	13,641
Student Services	18,120	28,370	10,250	1.1152	31,638	13,518
President's Office	3,279	3,279	0	1.1152	3,657	378
Learning Resources	32,255	32,255	0	1.1152	35,971	3,716
Institutional Advancement	2,079	2,079	0	1.1152	2,319	240
General:						
Maintenance/Storage/Custodial	13,568	18,768	5,200	1.1152	20,930	7,362
TOTALS* (net s.f.)	599,483	712,003	112,520		795,020	195,537

(* academic & service areas only - does not include building support areas, walls, circulation, etc.)

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
FACILITIES MASTER PLAN

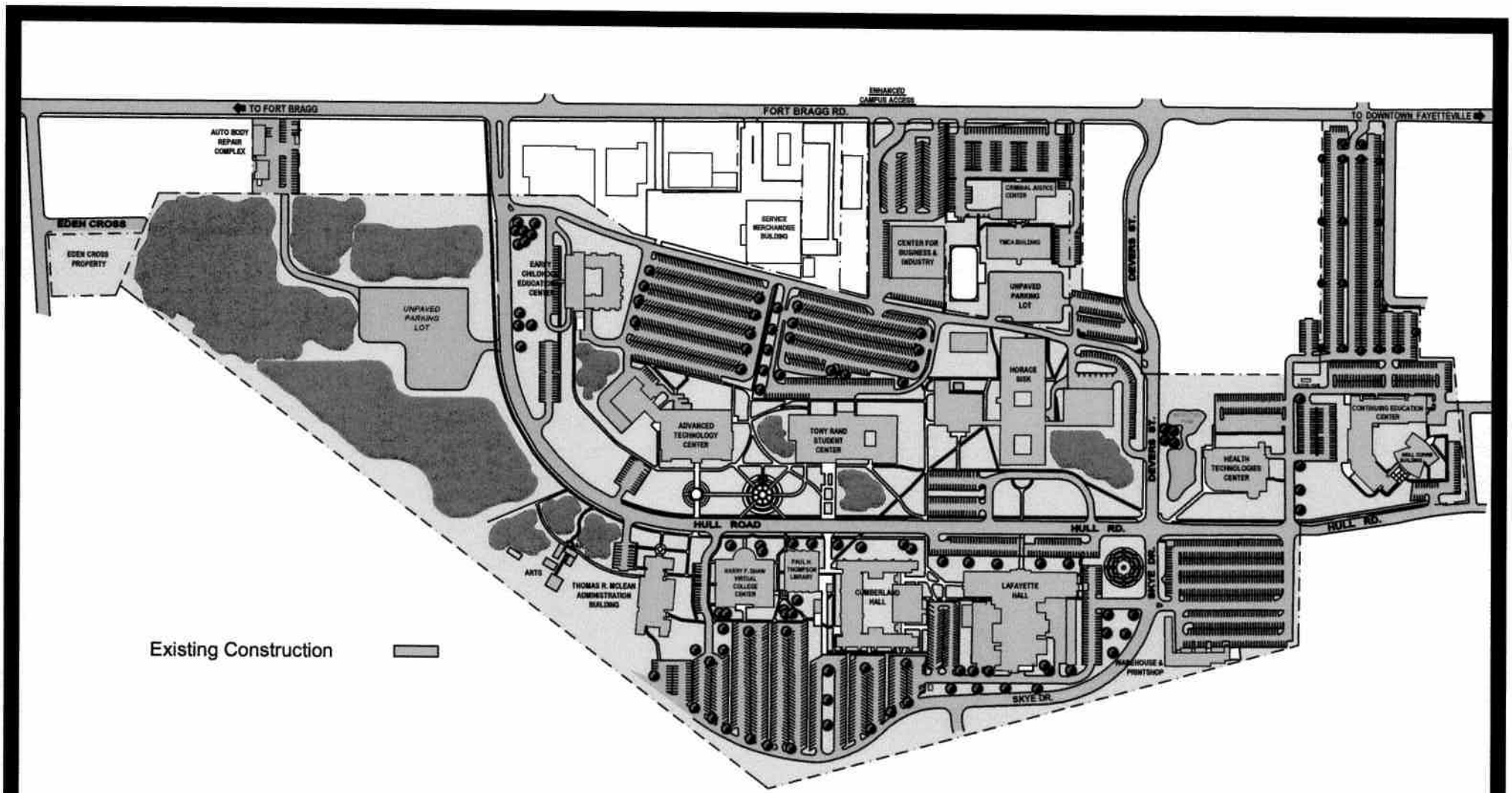
Gross Space Assessment Summary

Program/Service Areas Combined Totals	Year 2008	Year 2012
Current Space (2008) actual area (net s.f.)	599,483	599,483
Projected Space Need actual + needed area (net s.f.)	712,003	795,020
Projected Space Deficit needed - actual area (net s.f.)	112,520	195,537
Building Support Factor* 40% of net deficit area	45,008	78,215
Total Gross Space Deficit net deficit area (40%) (gross s.f.)	157,528	273,752

(* 40% building support factor estimates additional space for walls, circulation, toilets, mechanic

APPENDIX D

Proposed Campus Phased Master Plans

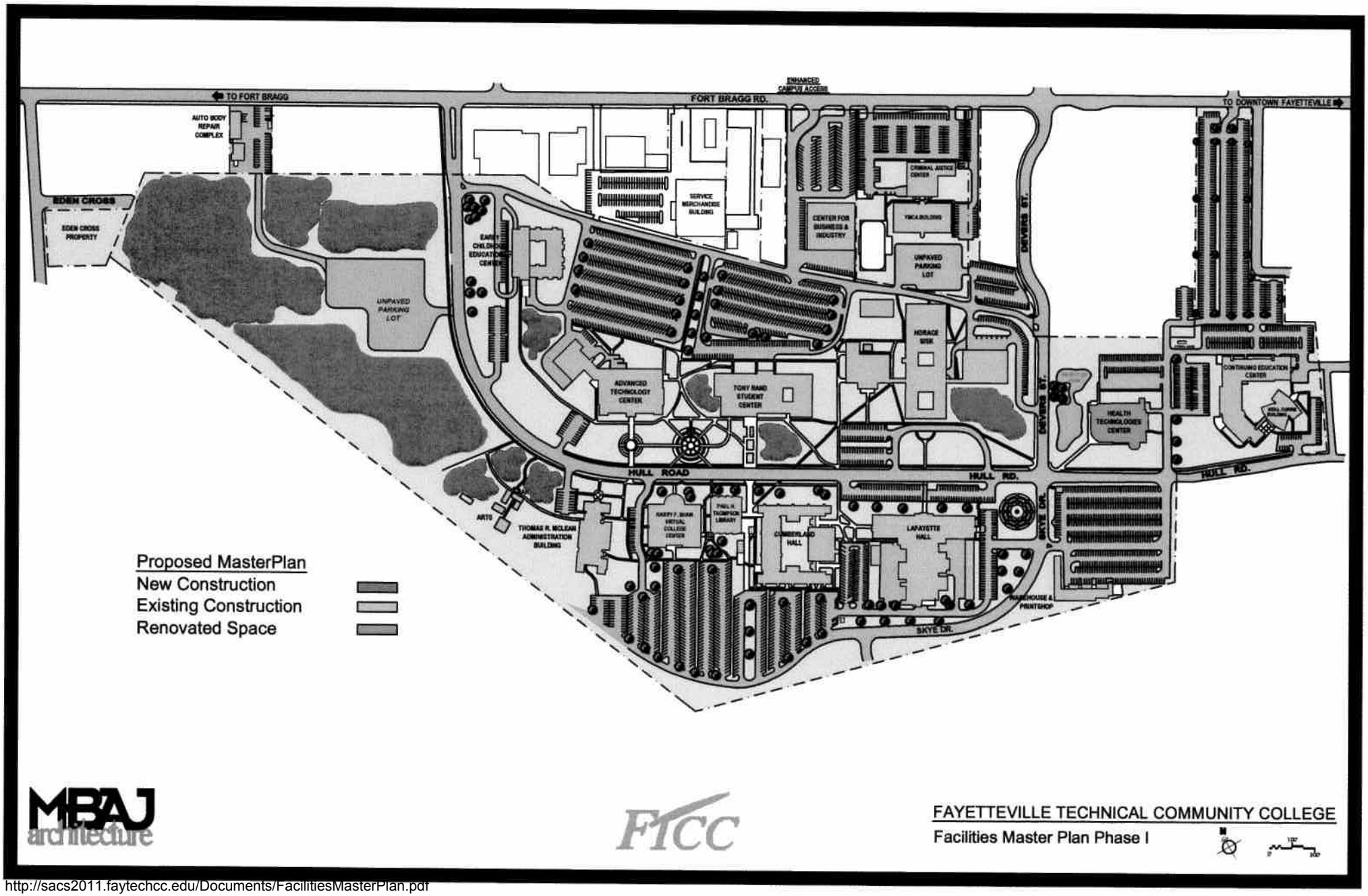


MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE

Existing Campus Plan

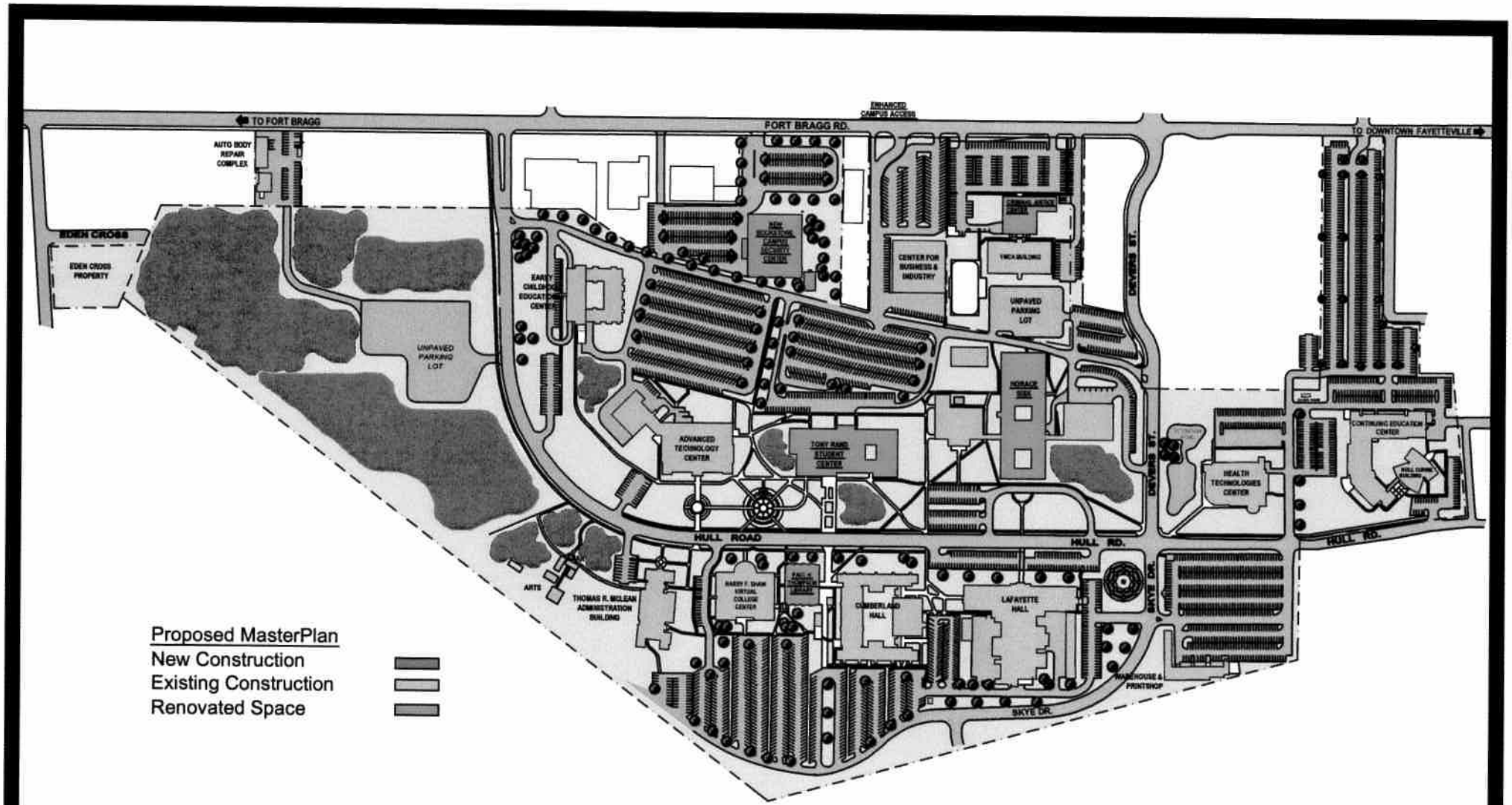


MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE

Facilities Master Plan Phase I

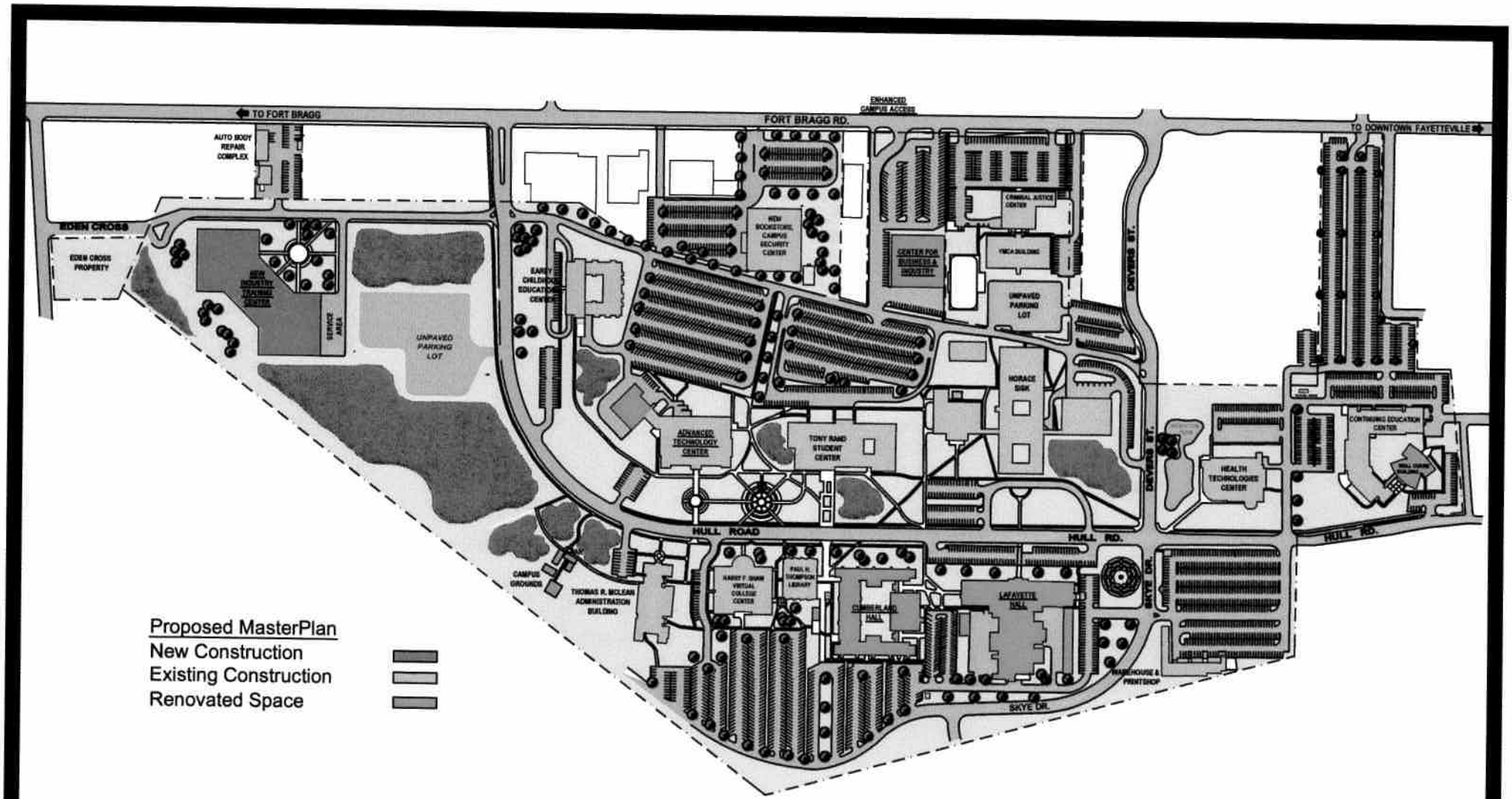


MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE

Facilities Master Plan Phase II

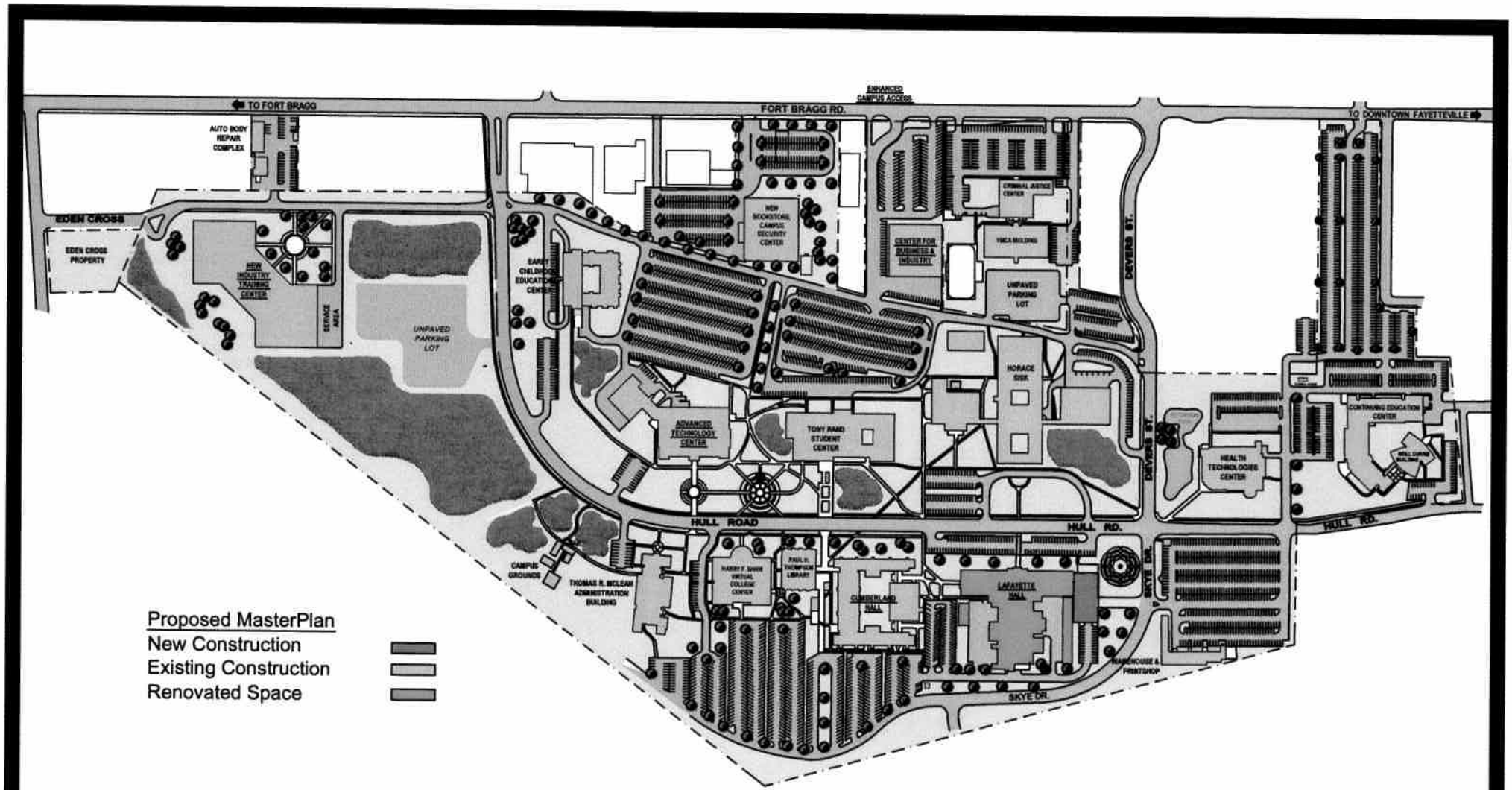


MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE

Facilities Master Plan Phase III

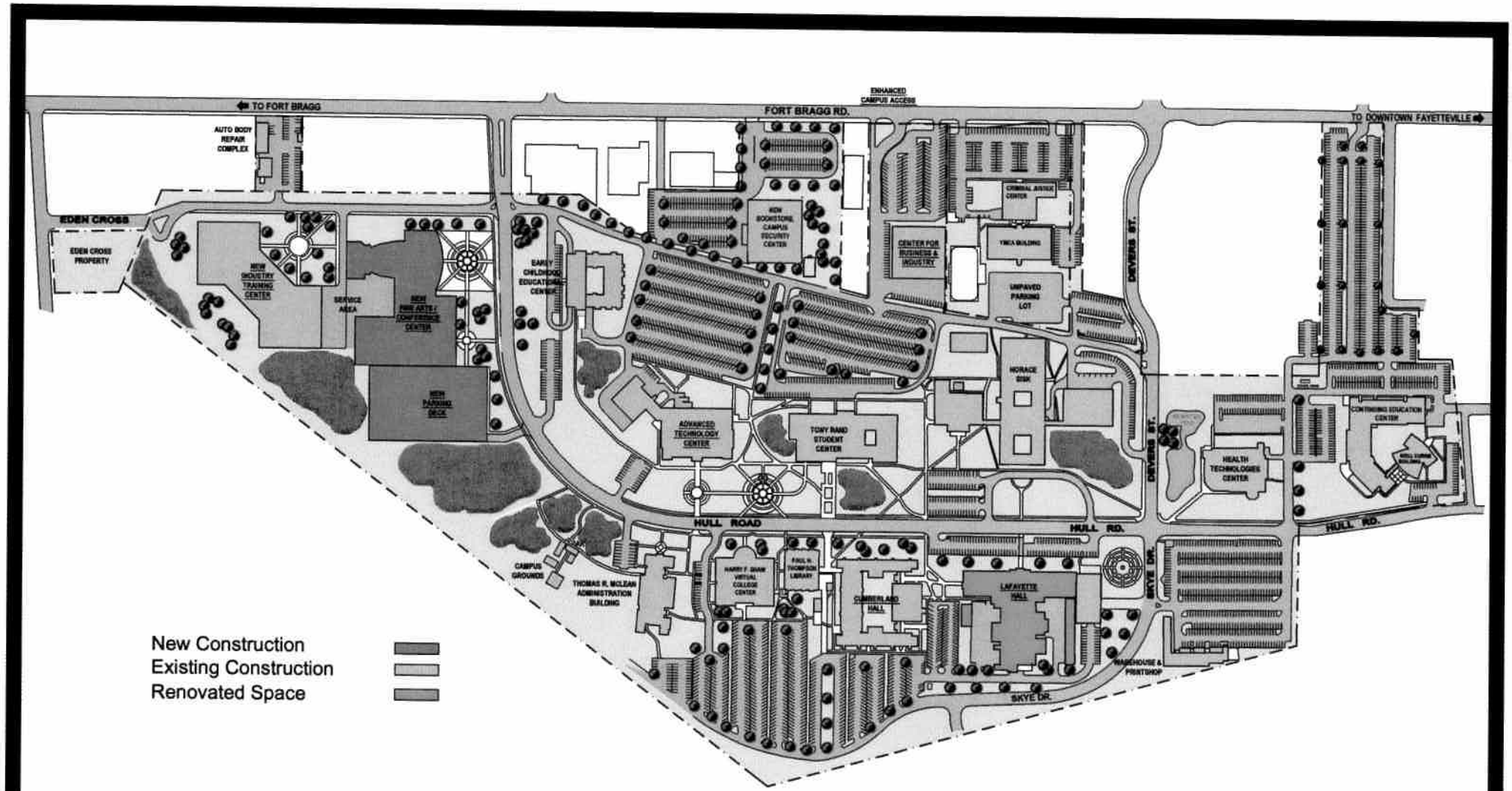


MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE

Facilities Master Plan Phase IV

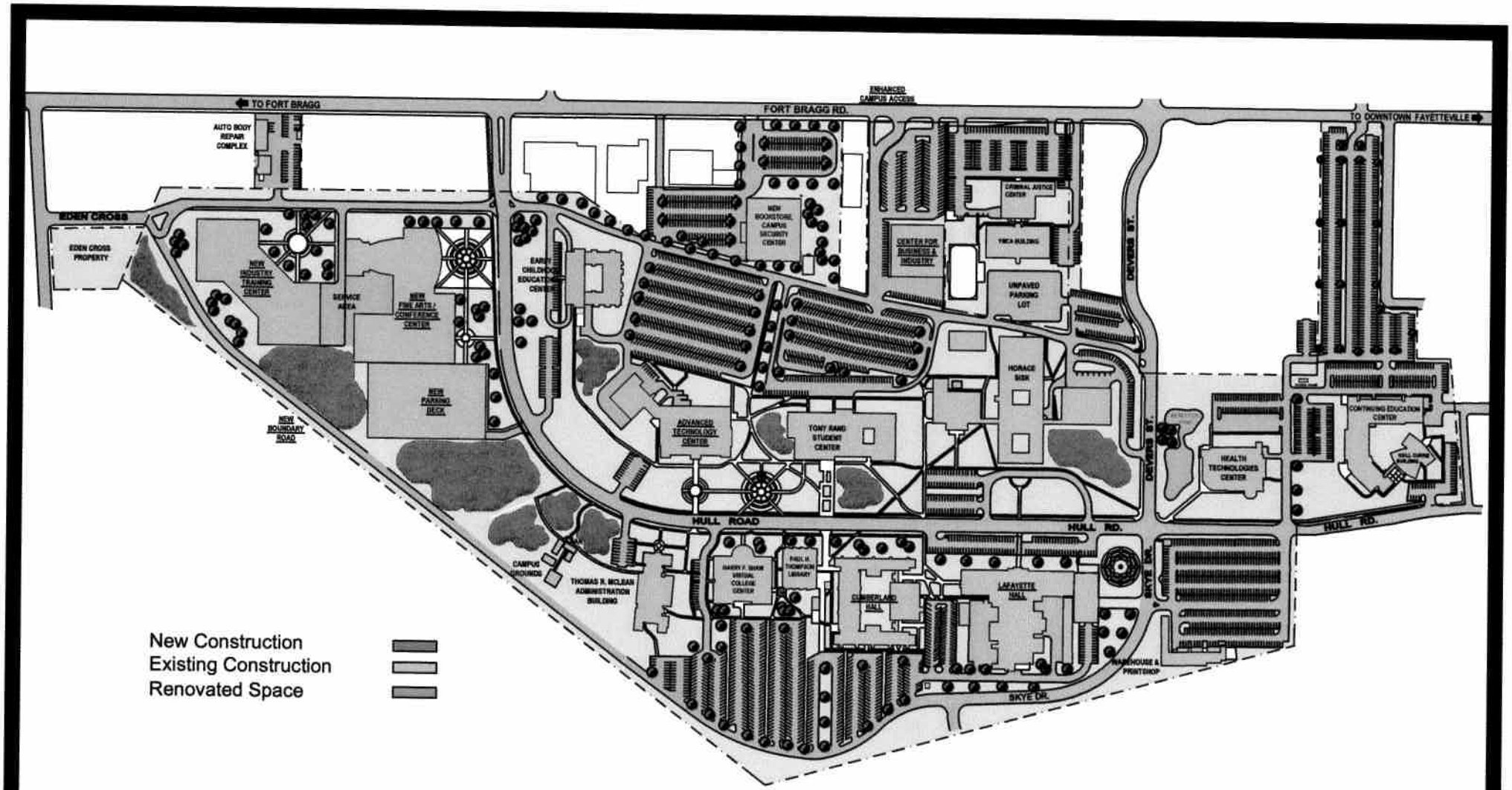


MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE

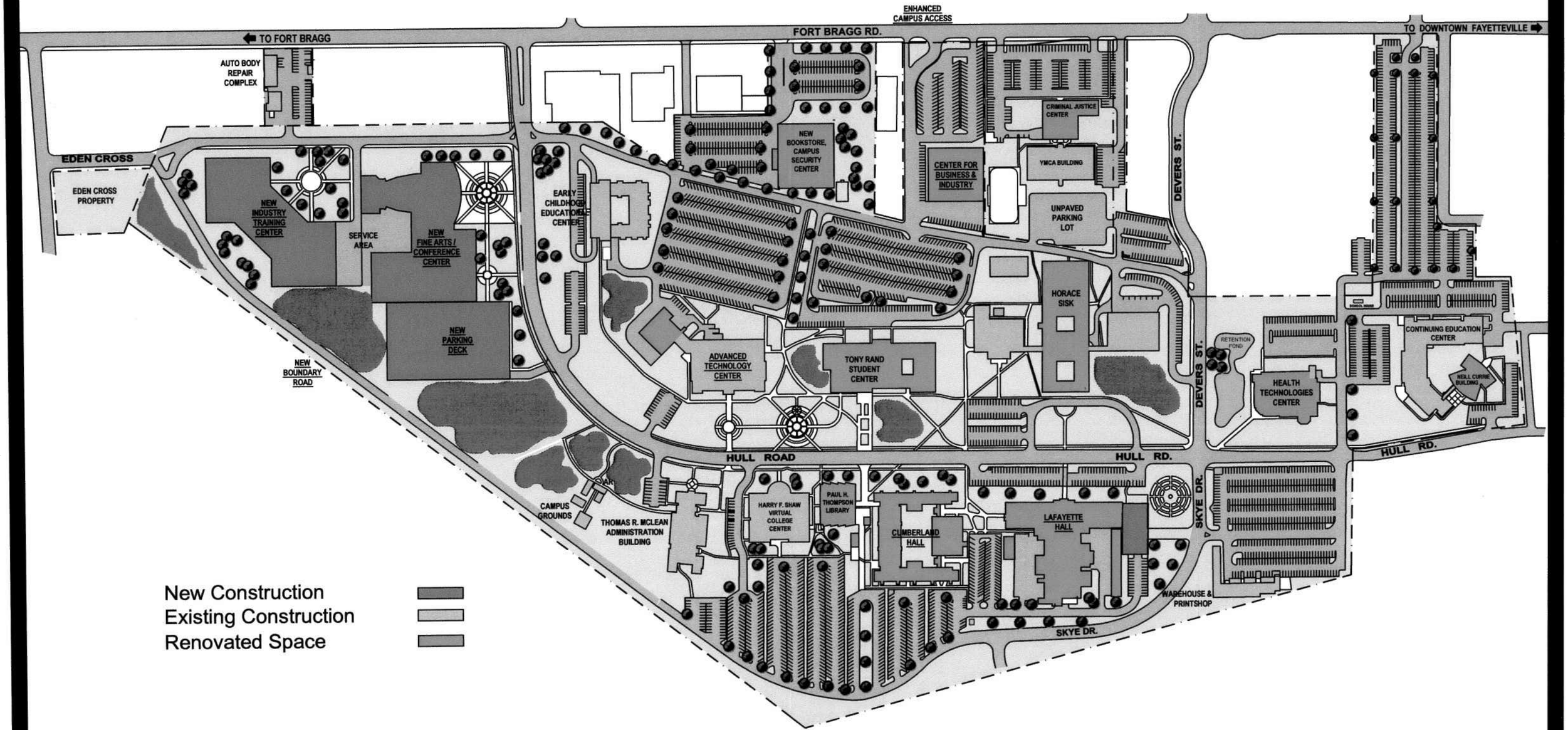
Facilities Master Plan Phase V



MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE
Facilities Master Plan Phase VI



New Construction
Existing Construction
Renovated Space

MBAJ architecture

FTCC

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE

Facilities Master Plan

N

0' 100' 200'

APPENDIX E

Capital Priority Projects 1-3

NORTH CAROLINA COMMUNITY COLLEGE SYSTEM
2008 Capital Project Priority Request

College Name:	Fayetteville Technical Community College
Project Name:	Priority 1 New Satellite Campus
Project Description:	New 75,000 sf building on 40 acre site. Project will support growth of FTCC's Health Technology programs and serve Curriculum and Continuing Education program needs in the high growth area of Cumberland County associated with BRAC. Renovation of vacated space in the Health Technologies Center on the main Campus to expand existing Health Technology programs.
Estimated Cost of Design:	$3,206,584
Estimated Cost of Construction *including* Owner's Project Costs and Escalation Cost :	$37,987,515
Contingency Amount:	$933,956
Total Project Cost:	$42,128,055

NORTH CAROLINA COMMUNITY COLLEGE SYSTEM
DIVISION OF FINANCE AND BUSINESS
ADMINISTRATIVE AND FACILITY SERVICES
PROPOSED RENOVATION / REHABILITATION OR CAPITAL IMPROVEMENT PROJECT
FOR THE BIENNIUM 2009 - 2011

COMMUNITY COLLEGE: Fayetteville Technical Community College DATE: 19-May-08

PROJECT IDENTIFICATION: Priority 1 - New Satellite Campus

PROJECT LOCATION/COUNTY: Cumberland County

PROJECT DESCRIPTION & JUSTIFICATION: (Attach additional data as necessary to indicate need, size, function of improvements and master plan.)

New Satellite Campus to support growth of Health Technology Programs and serve Curriculum and Continuing Education program needs in the high growth area of Cumberland County associated with BRAC. Renovation o vacated space in the Health Technologies Center on the Main Campus to expand existing Health technology programs.

CURRENT ESTIMATED CONSTRUCTION COST*	QTY	UNIT	COST PER UNIT	TOTAL
A. **Land Requirement**	1	Lump Sum		$6,000,000
B. **Site Preparation**				
1. Demolition	1	Lump Sum		$40,500
2. Site Work***	1	Lump Sum		$2,250,780
C. **Construction**				
1. Utility Services**	1	Lump Sum		$0
2. Building Construction	1	Lump Sum		$10,687,410
3. Plumbing	1	Lump Sum		$1,579,394
4. HVAC	1	Lump Sum		$2,327,528
5. Electrical	1	Lump Sum		$1,246,890
6. Other: _____	1	Lump Sum		$50,000
D. **Equipment**				
1. Fixed	1	Lump Sum		$4,749,378
2. Moveable	1	Lump Sum		$2,200,000

ESTIMATED CONSTRUCTION COSTS		$ 31,131,880
OWNER'S PROJECT COSTS		$1,019,840
CONTINGENCIES	3 % (% of Estimated Construction Costs)	$ 933,956
DESIGN FEE	10 % (% of Estimated Construction Costs **+ Contingencies**)	$ 3,206,584
ESTIMATED COSTS	Sum of **Estimated Construction Costs + Owner's Costs + Contingencies + Design Fee**)	$ 36,292,260

Escalation % = 0.67 per month multiplied by number of months

(From Est. Date to mid-point of construction) = 24 months 16.08 %

ESCALATION COST INCREASE (Estimated Construction Costs x Escalation %) $ 5,835,795.41

TOTAL ESTIMATED PROJECT COSTS **(Estimated Costs + Escalation Cost Increase)** **$ 42,128,055**

* Attach basis and justification for estimate. Include description, quantities, units, special features, similar cost on recent projects, etc.

** Attach explanation of any special building, mechanical, or electrical service requirements with appropriate distance to existing water, gas, electrical or other utility service.

*** Include items such as grading, roads, walks, parking, etc.

APPROVED BY: _____ **TITLE:** _____ **DATE:** _____
(President or Chief Business Officer)

NCCCS 3-9
April 2008

Project Name:

Description	Quantity	Unit	$/Unit	Total
A Land Requirement				
	40	ea	150,000	$6,000,000
Total				$6,000,000
B Site Preparation				
1. Demolition				
Asbestos		ea	0	$0
Selective Demolition	8100	gsf	5	$40,500
		gsf	0	$0
Total				$40,500
2. General				
Grading - Site Preparation	1	ls	2,250,780	$2,250,780
Total				$2,250,780
C Construction				
1. Utility Services				
Steam		lf	0	$0
Chilled water		lf	0	$0
Domestic water		lf	0	$0
Sanitary sewer		lf	0	$0
Storm water		lf	0	$0
Electrical		lf	0	$0
Total				$0
2. General Construction				
		ea	0	$0
		ea	0	$0
New Construction	75026	gsf	135	$10,128,510
HTC Renovation	8100	gsf	69	$558,900
		gsf	0	$0
Total				$10,687,410
3. Plumbing				
New Construction Plumbing	75026	gsf	15	$1,125,390
New Construction Fire Protection	75026	gsf	4	$300,104
HTC Renovation Plumbing	8100	gsf	15	$121,500
HTC Renovation Fire Protection	8100	gsf	4	$32,400
Total				$1,579,394
4. HVAC				
New Construction HVAC	75026	gsf	25	$1,875,650
New Construction Building Automat	75026	gsf	3	$225,078
HTC Renovation HVAC	8100	gsf	25	$202,500
HTC Renovation Building Automati	8100	gsf	3	$24,300
		ea	0	$0
Total				$2,327,528

5. Electrical					
	New Construction Lighting & Powe	75026	gsf	12	$900,312
	New Construction Lighting Controls	75026	gsf	2	$150,052
	New Construction Fire Alarm	75026	gsf	1	$75,026
	HTC Renovation Lighting & Power	8100	gsf	12	$97,200
	HTC Renovation Lighting Controls	8100	gsf	2	$16,200
	HTC Renovation Fire Alarm	8100	gsf	1	$8,100
					$0
	Total				$1,246,890
6. Other Construction Cost					
	Landscaping and irrigation	1	ea	50,000	$50,000
	Total				$50,000
D Equipment					
1 Fixed					
	Casework		ea	0	$0
	Special systems	83126	gsf	3	$249,378
	Immersion Environment Equipment	3	ea	1,500,000	$4,500,000
	Total				$4,749,378
2 Moveable					
	Furnishings - modular furniture	1	ls	2,200,000	$2,200,000
	Scientific Equipment		ea	0	$0
	Total				$2,200,000
Owner's Project Costs					
	Testing	1	ea	258,840	$258,840
	Surveying		ea	0	$0
	Programming	1	ea	35,000	$35,000
	General infrastructure assessment		ea	0	$0
	Chilled water and steam assessments		ea	0	$0
	Electrical assessment		ea	0	$0
	Parking Assessment		ea	0	$0
	Sanitary Sewer assessments		ea	0	$0
	Domestic water assessment		ea	0	$0
	Storm Water Assessments		ea	0	$0
	Commissioning	1	ea	518,000	$518,000
	Special Inspections	1	ea	173,000	$173,000
			gsf/yr	0	$0
					$0
	Owner's Reserve	1	ea	35,000	$35,000
	Total				$1,019,840

NORTH CAROLINA COMMUNITY COLLEGE SYSTEM
2008 Capital Project Priority Request

College Name:	Fayetteville Technical Community College
Project Name:	Priority 2 Former Service Merchandise Building
Project Description:	Renovate 70,000 sf former service merchandise building on Bragg Blvd to provide additional student support space (including a new Bookstore, and new Campus Security Center), new Curriculum program space (Criminal Justice and Simulation / Gaming) and faculty support space. Renovate the existing Tony Rand Center to expand Student Services into the space vacated by the Bookstore and upgrade existing PM&E building systems.Renovate existing Thompson Library Building to provide additional faculty offices in the space vacated by the Campus Recruiters and replace existing roof system. Renovate the existing Criminal Justice Center to accommodate new Public Service Curriculum programs(Cosmetology, Esthetics & Massage Therapy)in the space vacated by the Criminal Justice Programs.
Estimated Cost of Design:	$2,157,304
Estimated Cost of Construction *including* Owner's Project Costs and Escalation Cost :	$25,497,648
Contingency Amount:	$628,341
Total Project Cost:	$28,283,293

NORTH CAROLINA COMMUNITY COLLEGE SYSTEM
DIVISION OF FINANCE AND BUSINESS
ADMINISTRATIVE AND FACILITY SERVICES
PROPOSED RENOVATION / REHABILITATION OR CAPITAL IMPROVEMENT PROJECT
FOR THE BIENNIUM 2009 - 2011

COMMUNITY COLLEGE: Fayetteville Technical Community College DATE: 28-May-08

PROJECT IDENTIFICATION: Priority 2 - Former Service Merchandise Building

PROJECT LOCATION/COUNTY: Cumberland County

PROJECT DESCRIPTION & JUSTIFICATION: (Attach additional data as necessary to indicate need, size, function of improvements and master plan.)

Renovate former Service Merchandise Building on Bragg Blvd to provide additional Student Support space (including a new Bookstore and new Campus Security Center), new Curriculum Program space and Faculty Support space. Renovate Space the existing Tony Rand Center to expand Student Services into vacated space and upgrade existing PM&E Building Systems. Renovate the existing Thompson Library Building to provide additional faculty offices in the vacated space and replace existing roof system. Renovate vacated space in the existing Criminal Justice Center to accomodate new Public Service Curriculum programs (including Cosmetology, Esthetics and Massage Therapy).

CURRENT ESTIMATED CONSTRUCTION COST*

		QTY	UNIT	COST PER UNIT	TOTAL
A.	**Land Requirement**	1	Lump Sum		$0
B.	**Site Preparation**				
1.	Demolition	1	Lump Sum		$171,000
2.	Site Work***	1	Lump Sum		$485,000
C.	**Construction**				
1.	Utility Services**	1	Lump Sum		$0
2.	Building Construction	1	Lump Sum		$10,146,700
3.	Plumbing	1	Lump Sum		$2,033,800
4.	HVAC	1	Lump Sum		$3,812,200
5.	Electrical	1	Lump Sum		$2,046,000
6.	Other: _____	1	Lump Sum		$50,000
D.	**Equipment**				
1.	Fixed	1	Lump Sum		$0
2.	Moveable	1	Lump Sum		$2,200,000

ESTIMATED CONSTRUCTION COSTS		$ 20,944,700
OWNER'S PROJECT COSTS		$635,000
CONTINGENCIES	3 % (% of Estimated Construction Costs)	$ 628,341
DESIGN FEE	10 % (% of Estimated Construction Costs **+ Contingencies)**	$ 2,157,304
ESTIMATED COSTS	Sum of **Estimated Construction Costs + Owner's Costs + Contingencies + Design Fee)**	$ 24,365,345

Escalation % = 0.67 per month multiplied by number of months

(From Est. Date to mid-point of construction) = 24 months 16.08 %

ESCALATION COST INCREASE (Estimated Construction Costs x Escalation %) $ 3,917,947.49

TOTAL ESTIMATED PROJECT COSTS **(Estimated Costs + Escalation Cost Increase)** **$ 28,283,293**

* Attach basis and justification for estimate. Include description, quantities, units, special features, similar cost on recent projects, etc.

** Attach explanation of any special building, mechanical, or electrical service requirements with appropriate distance to existing water, gas, electrical or other utility service.

*** Include items such as grading, roads, walks, parking, etc.

APPROVED BY: _____ **TITLE:** _____ **DATE:** _____
(President or Chief Business Officer)

NCCCS 3-9
April 2008

Project Name:

Description	Quantity	Unit	$/Unit	Total
A Land Requirement				
	0	ea	0	$0
Total				$0
B Site Preparation				
1. Demolition				
Asbestos		ea	0	$0
Selective Demolition	30,000	gsf	6	$171,000
		gsf	0	$0
Total				$171,000
2. General				
Parking - Site Preparation	1	ls	485,000	$485,000
Total				$485,000
C Construction				
1. Utility Services				
Steam		lf	0	$0
Chilled water		lf	0	$0
Domestic water		lf	0	$0
Sanitary sewer		lf	0	$0
Storm water		lf	0	$0
Electrical		lf	0	$0
Total				$0
2. General Construction				
		ea	0	$0
		ea	0	$0
Service Merchandise Renovation	70,000	gsf	120	$8,400,000
Rand Center Renovation	6,100	gsf	69	$420,900
Thompson Library Renovation	700	gsf	30	$21,000
Thompson Library Roof Replaceme	17,000	gsf	11	$187,000
Criminal Justice Center Renovation	16,200	gsf	69	$1,117,800
		gsf	0	$0
Total				$10,146,700
3. Plumbing				
Service Merchandise Plumbing	70,000	gsf	15	$1,050,000
Service Merchandise Fire Protectio	70,000	gsf	4	$280,000
Rand Center Renovation Plumbing	49,500	gsf	8	$396,000
Thompson Renovation Plumbing	700	gsf	0	$0
CJC Renovation Plumbing	16,200	gsf	15	$243,000
CJC Renovation Fire Protection	16,200	gsf	4	$64,800
Total				$2,033,800
4. HVAC				
Service Merchandise HVAC	70,000	gsf	25	$1,750,000
Service Merch Building Automation	70,000	gsf	3	$210,000
Rand Renovation HVAC	49,500	gsf	25	$1,237,500
Rand Renovation Building Automat	49,500	gsf	3	$148,500
Thompson Renovation HVAC	700	gsf	18	$12,600
CJC Renovation HVAC	16,200	gsf	25	$405,000
CJC Renovation Building Automatic	16,200	gsf	3	$48,600
		ea	0	$0

Total	$3,812,200

5. Electrical					
	Service Merchandise Lighting & Po	70,000	gsf	12	$840,000
	Service Merchandise Lighting Conti	70,000	gsf	2	$140,000
	Service Merchandise Fire Alarm	70,000	gsf	1	$70,000
	Rand Renovation Lighting & Power	49,500	gsf	12	$594,000
	Rand Renovation Lighting Controls	49,500	gsf	2	$99,000
	Rand Renovation Fire Alarm	49,500	gsf	1	$49,500
	Thompson Renovation Lighting & P	700	gsf	12	$8,400
	Thompson Renovation Lighting Cor	700	gsf	2	$1,400
	Thompson Renovation Fire Alarm	700	gsf	1	$700
	CJC Renovation Lighting & Power	16,200	gsf	12	$194,400
	CJC Renovation Lighting Controls	16,200	gsf	2	$32,400
	CJC Renovation Fire Alarm	16,200	gsf	1	$16,200
					$0
	Total				$2,046,000
6. Other Construction Cost					
	Landscaping and irrigation	1	ea	50,000	$50,000
	Total				$50,000
D Equipment					
1 Fixed					
	Casework		ea	0	$0
	Special systems		gsf		$0
			ea		$0
	Total				$0
2 Moveable					
	Furnishings - modular furniture	1	ls	2,200,000	$2,200,000
	Scientific Equipment		ea	0	$0
	Total				$2,200,000
Owner's Project Costs					
	Testing	1	ea	15,000	$15,000
	Surveying		ea	5,000	$0
	Programming	1	ea	35,000	$35,000
	General infrastructure assessment		ea	0	$0
	Chilled water and steam assessments		ea	0	$0
	Electrical assessment		ea	0	$0
	Parking Assessment		ea	0	$0
	Sanitary Sewer assessments		ea	0	$0
	Domestic water assessment		ea	0	$0
	Storm Water Assessments		ea	0	$0
	Commissioning	1	ea	550,000	$550,000
	Special Inspections	1	ea	0	$0
			gsf/yr	0	$0
					$0
	Owner's Reserve	1	ea	35,000	$35,000
	Total				$635,000

NORTH CAROLINA COMMUNITY COLLEGE SYSTEM
2008 Capital Project Priority Request

College Name:	Fayetteville Technical Community College
Project Name:	Priority 3 New Industry Training Center
Project Description:	New industry Training Center to consolodate and expand Construction Industry related Curriculum and Continuing Education programs in one facility. The Industry Training Center will also house a new Transportation training Center to consolodate the college's Automotive Repair, Small Truck Repair and Autobaody programs. Renovate the existing Cumberland Hall to accommodate Fine Arts Curriculum programs and provide additional General Studies Classrooms in the space vacated by Building Technologies and upgrade existing PM&E Building Systems. renovate the existing Advanced Technologies Centerto house the Campus Facility Operations Center in the space vacated by Automotive Repair Renovate the existing Center for Business & Industry to consolodate Continuing Education Administrtion and Registration functions, provide Customized Training Labs for Local Industry and provide additional Continuing eduaction Classroom / Labs in the space vacated by the Construction Training programs and upgrade existing PM&E Building Systems. Renovate the existing Neill Currie Center to accommodate the Military business Center, The Small Business Center and a new Small Business Incubator in the space vacated by Continuing Education Administration.Renovate Existing Lafayette Hall to accommodate faculty

	offices and Campus storrage in the space vacated by Campus Facility Operations.
Estimated Cost of Design:	$4,572,170
Estimated Cost of Construction *including* Owner's Project Costs and Escalation Cost :	$54,659,558
Contingency Amount:	$1,331,700
Total Project Cost:	$60,563,428

NORTH CAROLINA COMMUNITY COLLEGE SYSTEM
DIVISION OF FINANCE AND BUSINESS
ADMINISTRATIVE AND FACILITY SERVICES
PROPOSED RENOVATION / REHABILITATION OR CAPITAL IMPROVEMENT PROJECT
FOR THE BIENNIUM 2009 - 2011

COMMUNITY COLLEGE: Fayetteville Technical Community College DATE: 28-May-08

PROJECT IDENTIFICATION: Priority 3 - New Industry Training Center

PROJECT LOCATION/COUNTY: Cumberland County

PROJECT DESCRIPTION & JUSTIFICATION: (Attach additional data as necessary to indicate need, size, function of improvements and master plan.)

New Industry Training Center to consolodate and expand Construction Industry related Curriculum and Continuing Education programs in one facility. The Industry Training facility will also house a new Transportation Center to consolodate automotive repair, small truck repair and autobody programs. Renovate the existing Cumberland Hall to accommodate Fine Arts Curriculum Programs and provide additional General Studies Classrooms in the vacated space and upgrade existing PM&E Building Systems. Renovate the existing Advanced Technologies Center to house the Campus Facility Operations Center in the vacated space. Renovate existing Center for Business & Industry to consolodate Continuing Education Administration and Registration, Customized Training Labs and provide additional Continuing Education Classrooms / Labs in the vacated space and upgrade existing PM&E Building Systems. Renovate the existing Neill Currie Center to accommodate the Military business Center, Small Business Center and a new Small Business Incubator in the vacated space. Renovate the existing Lafayette Hall to accommodate faculty Offices and Campus storage in the vacated space.

CURRENT ESTIMATED CONSTRUCTION COST*	QTY	UNIT	COST PER UNIT	TOTAL
A. **Land Requirement**	1	Lump Sum		$1,125,000
B. **Site Preparation**				
1. Demolition	1	Lump Sum		$235,980
2. Site Work***	1	Lump Sum		$3,545,220
C. **Construction**				
1. Utility Services**	1	Lump Sum		$0
2. Building Construction	1	Lump Sum		$21,205,100
3. Plumbing	1	Lump Sum		$3,207,000
4. HVAC	1	Lump Sum		$6,913,200
5. Electrical	1	Lump Sum		$3,808,500
6. Other: _____	1	Lump Sum		$50,000
D. **Equipment**				
1. Fixed	1	Lump Sum		$0
2. Moveable	1	Lump Sum		$4,300,000

ESTIMATED CONSTRUCTION COSTS			$ 44,390,000
OWNER'S PROJECT COSTS			$1,880,000
CONTINGENCIES	3 %	(% of Estimated Construction Costs)	$ 1,331,700
DESIGN FEE	10 %	(% of Estimated Construction Costs **+ Contingencies)**	$ 4,572,170
ESTIMATED COSTS		Sum of **Estimated Construction Costs + Owner's Costs + Contingencies + Design Fee)**	$ 52,173,870

Escalation % = 0.67 per month multiplied by number of months

(From Est. Date to mid-point of construction) = 24 months 16.08 %

ESCALATION COST INCREASE (Estimated Construction Costs x Escalation %) $ 8,389,558.30

TOTAL ESTIMATED PROJECT COSTS **(Estimated Costs + Escalation Cost Increase)** **$ 60,563,428**

* Attach basis and justification for estimate. Include description, quantities, units, special features, similar cost on recent projects, etc.

** Attach explanation of any special building, mechanical, or electrical service requirements with appropriate distance to existing water, gas, electrical or other utility service.

*** Include items such as grading, roads, walks, parking, etc.

APPROVED BY: _____ **TITLE:** _____ **DATE:** _____
(President or Chief Business Officer)

NCCCS 3-9
April 2008

Project Name:

Description	Quantity	Unit	$/Unit	Total
A Land Requirement				
	5	acres	250,000	$1,125,000
Total				$1,125,000
B Site Preparation				
1. Demolition				
Asbestos		ea	0	$0
Selective Demolition	41,400	gsf	6	$235,980
		gsf	0	$0
Total				$235,980
2. General				
Parking - Site Preparation	1	ls	3,545,220	$3,545,220
Total				$3,545,220
C Construction				
1. Utility Services				
Steam		lf	0	$0
Chilled water		lf	0	$0
Domestic water		lf	0	$0
Sanitary sewer		lf	0	$0
Storm water		lf	0	$0
Electrical		lf	0	$0
Total				$0
2. General Construction				
		ea	0	$0
		ea	0	$0
Industry Training Center	118,000	gsf	140	$16,520,000
Cumberland Hall Renovation	10,000	gsf	69	$690,000
Advance Technology Renovation	10,400	gsf	69	$717,600
CBI Renovation	31,000	sq	69	$2,139,000
Neill Currie Renovation	10,000	gsf	69	$690,000
Lafayette Hall Renovation	6,500	gsf	69	$448,500
		gsf	0	$0
Total				$21,205,100
3. Plumbing				
Industry Training Center Plumbing	118,000	gsf	15	$1,770,000
Industry Training Ctr Fire Protectior	118,000	gsf	4	$472,000
Cumberland Hall Plumbing	78,000	gsf	6	$468,000
Advance Technology Plumbing	10,400	gsf	15	$156,000
CBI Plumbing	31,000	gsf	7	$217,000
CBI Fire Protection	31,000	gsf	4	$124,000
Neill Currie Plumbing	10,000	gsf	0	$0
Lafayette Hall Plumbing	6,500	gsf	0	$0
Total				$3,207,000

4. HVAC					
	Industry Training Center HVAC	118,000	gsf	25	$2,950,000
	Industry Training Ctr Building Auton	118,000	gsf	3	$354,000
	Cumberland Hall HVAC	78,000	gsf	25	$1,950,000
	Advance Technology(ATC) HVAC	10,400	gsf	25	$260,000
	ATC Building Automation	10,400	gsf	3	$31,200
	CBI HVAC	31,000	gsf	25	$775,000
	CBI Building Automation	31,000	gsf	3	$93,000
	Neill Currie HVAC	10,000	gsf	25	$250,000
	Lafayette Hall HVAC	6,500	gsf	25	$250,000
			ea	0	$0
	Total				$6,913,200
5. Electrical					
	Industry Training Ctr Lighting & Pov	118,000	gsf	12	$1,416,000
	Industry Training Ctr Lighting Contr	118,000	gsf	2	$236,000
	Industry Training Ctr Fire Alarm	118,000	gsf	1	$118,000
	Cumberland Hall Lighting & Power	78,000	gsf	12	$936,000
	Cumberland Hall Lighting Controls	78,000	gsf	2	$156,000
	Cumberland Hall Fire Alarm	78,000	gsf	1	$78,000
	ATC Lighting & Power	10,400	gsf	12	$124,800
	ATC Lighting Controls	10,400	gsf	2	$20,800
	ATC Fire Alarm	10,400	gsf	1	$10,400
	CBI Lighting & Power	31,000	gsf	12	$372,000
	CBI Lighting Controls	31,000	gsf	2	$62,000
	CBI Fire Alarm	31,000	gsf	1	$31,000
	Neill Currie Lighting & Power	10,000	gsf	12	$120,000
	Neill Currie Lighting Controls	10,000	gsf	2	$20,000
	Neill Currie Fire Alarm	10,000	gsf	1	$10,000
	Lafayette Hall Lighting & Power	6,500	gsf	12	$78,000
	Lafayette Hall Lighting Controls	6,500	gsf	2	$13,000
	Lafayette Hall Fire Alarm	6,500	gsf	1	$6,500
					$0
	Total				$3,808,500
6. Other Construction Cost					
	Landscaping and irrigation	1	ea	50,000	$50,000
	Total				$50,000
D Equipment					
1 Fixed					
	Casework		ea	0	$0
	Special systems		gsf		$0
			ea		$0
	Total				$0
2 Moveable					
	Furnishings - modular furniture	1	ls	4,300,000	$4,300,000
	Scientific Equipment		ea	0	$0
	Total				$4,300,000

Owner's Project Costs

Testing	1	ea	400,000	$400,000
Surveying	1	ea	30,000	$30,000
Programming	1	ea	35,000	$35,000
General infrastructure assessment		ea	0	$0
Chilled water and steam assessments		ea	0	$0
Electrical assessment		ea	0	$0
Parking Assessment		ea	0	$0
Sanitary Sewer assessments		ea	0	$0
Domestic water assessment		ea	0	$0
Storm Water Assessments		ea	0	$0
Commissioning	1	ea	1,100,000	$1,100,000
Special Inspections	1	ea	280,000	$280,000
		gsf/yr	0	$0
				$0
Owner's Reserve	1	ea	35,000	$35,000
Total				$1,880,000