

TRUMAN STATE UNIVERSITY
Kirksville 63501

OFFICIAL MINUTES
OF THE
BOARD OF GOVERNORS

Page 1

OPEN SESSION
OF MEETING ON
JANUARY 15, 2021

The Board of Governors for Truman State University met on Friday, January 15, 2021, on the University campus in Kirksville, Missouri. The meeting was held in McClain Hall 200. The open session of the meeting was called to order shortly after 3:30 p.m. by the Chair of the Board of Governors, K. Brooks Miller, Jr.

Participating by conference call were six of the seven voting members: Sarah Burkemper, Philip J. Christofferson, Cheryl J. Cozette, Jennifer Kopp Dameron, Nancy Gingrich, and K. Brooks Miller, Jr. The seventh voting member, Jim O'Donnell, was unable to participate and his absence was recorded as excused

Also participating in the conference call meeting were two of the three non-voting members: Mike McClaskey, one of the two out-of-state members, and Abigail Smeltzer, student representative. The other out-of-state member, David Lee Bonner, was unable to participate and his absence was recorded as excused.

Call to Order

Governor Miller, Chair of the Board, called the meeting to order shortly after 3:30 p.m. and welcomed all in attendance.

Architectural Services – Pershing Renovation Project

Governor Christofferson moved the adoption of the following resolution:

BE IT RESOLVED that the proposal from PGAV Architects to provide architectural services for the Pershing Renovation Project, with the fees and work for such services to be within the guidelines of the proposal, be approved; and

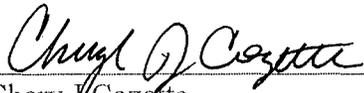
BE IT FURTHER RESOLVED that the President of the University, or her designee, be authorized to execute a contract with the firm for the project; and

BE IT FURTHER RESOLVED that a copy of the proposal be attached to and made a part of the minutes for this meeting.

The motion was seconded by Governor Burkemper and carried by a unanimous vote of 6 to 0. Governor Miller declared the motion to be duly adopted, and the Secretary designated a copy of the document as Exhibit A.

Motion to Adjourn

There being no further business, Governor Cozette moved that the meeting be adjourned. The motion was seconded by Governor Gingrich and carried by a vote of 6 to 0. Governor Miller declared the motion to be duly adopted, and the meeting adjourned at 3:40 p.m.


Cheryl J. Cozette
Secretary of the Board of Governors

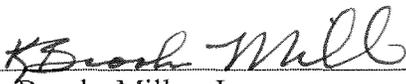
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OFFICIAL MINUTES
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Page 2

OPEN SESSION
OF MEETING ON
JANUARY 15, 2021

I hereby certify that the foregoing minutes
were approved by the Board of Governors
on the 6th day of February, 2021..



K. Brooks Miller, Jr.
Chair of the Board of Governors

PCAV PROJECTS

**REQUEST FOR QUALIFICATIONS
ARCHITECTURAL SERVICES**

TRUMAN STATE UNIVERSITY

Base Salary: \$107,200



EXHIBIT A

CC

PGAV ARCHITECTS
1900 W. 47th Place, Ste 300
Westwood, KS 66205

Lori Shook
Architect, Campus Planning
Truman State University
Kirksville, MO 63501

December 30, 2020

Re: Renovation of North Section of 1965-66 Building

Dear Lori and Members of the Selection Committee:

We were thrilled to receive your invitation to submit our qualifications to assist with another important renovation on the Truman State University Campus. Truman State is a recognized leader in higher education, not only in the State of Missouri, but throughout the region and beyond. Through our engagement on previous assignments, at Baldwin Hall, Pickler Library, and McClain, we've come to appreciate TSU's rich culture of putting students first and preparing next generation leaders for success. We would be pleased to once again work with you to enhance your facilities and thereby improve the academic experience for your faculty and students.

Although we don't yet know much about this project, it's clear that you need a collaborator that will work closely with you to renovate an academic building that is critical to your educational mission. As with previous assignments, it is critical that we be good stewards of the funds available. We will work hard to prioritize the various scopes of work being considered, explore options for phasing, look for creative solutions to breathe new life into the facility, all while considering maintenance, schedule, sustainability, and leveraging your budget to maximize value for the University. We are confident we can provide excellent consulting services to successfully guide this project through design and construction.

PGAV has put together a solid team to execute this work, with a depth of experience working on similar higher education renovation projects throughout the region. We hope the following pages demonstrate our team's capabilities and relevant experience. Finally, we hope our previous work has proven that we can be a trusted partner in helping to improve your campus. We are ready to continue our relationship with Truman State by serving as your design team for this project!

Sincerely,



Steve Troester
Principal



Steve Cramer
Vice President

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3▶ RELEVANT EXPERIENCE **23**

About PGAV Architects

PGAV is a nationally recognized planning and design firm specializing in next generation environments for learning, working, and living across the spectrum of institutional, academic and commercial sectors. For over 50 years, the firm has successfully guided its clients through the creative process of discovery, design and implementation to create benchmark, high performance facilities, inspired by the uniqueness of each client and place, and in the firm's belief that design can be transformative—empowering people, organizations and communities.

The firm's work on 55 college and university campuses is focused on student centered, 21st Century learning environments that empower students to take charge of their education through interactive experiences and hands-on learning. In addition, PGAV's science and technology practice has included signature projects for notable institutional and private sector clients, placing PGAV at the center of our region's rapid development as a national and global center for research, innovation and discovery.

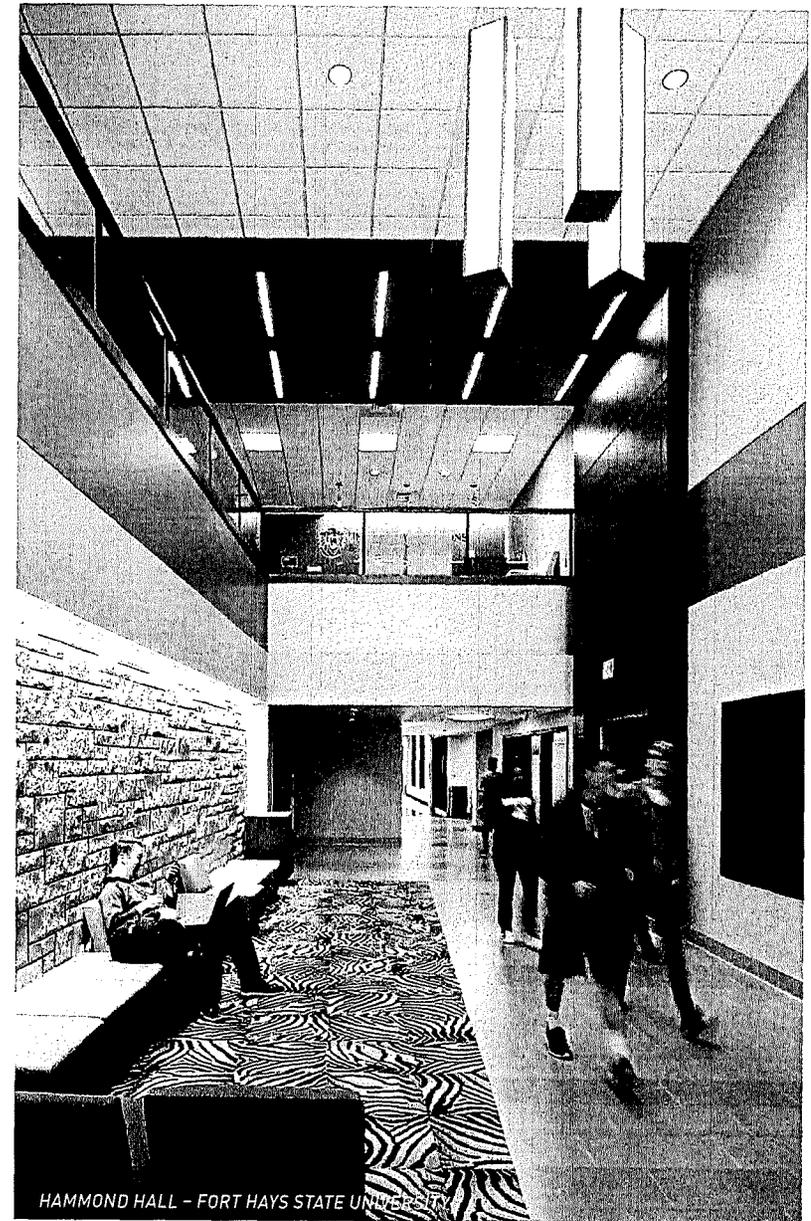
Since its founding in 1965, PGAV has grown to become a diverse firm of 145 professionals including architects, interior designers, landscape architects, urban and campus planners, graphic designers, and brand specialists. PGAV is guided by a commitment to help its clients achieve their goals by providing an integrated combination of specialized expertise with a proven approach to design, project management and financial stewardship.



Higher Education Clients

Avila University
Baker University
Benedictine College
Bethany College
Central Methodist University
Cleveland University
Fort Hays State University
Hannibal-LaGrange College
Illinois State University
Iowa State University
Johnson County Community College
Kansas State University
Lewis & Clark Community College
Lincoln University
Logan University
Metropolitan Community College (KCMO)
MidAmerica Nazarene University
Midwestern Baptist Theological Seminary
Missouri State University
Missouri Southern State University
Missouri University of Science & Technology
Montana State University
Oklahoma State University
Oklahoma State University-Tulsa
Park University
Rockhurst University
Southeastern Illinois College

Southwestern Illinois College
Southern Illinois University-Edwardsville
St. Paul School of Theology
St. Louis University
Stephens College
Sterling College
Stowers Institute for Medical Research
Truman State University
U.S. Army National Simulation Center
U.S. Air Force Academy
University of Arizona
University of Arkansas
University of Central Arkansas
University of Central Missouri
University of Dallas
University of Florida
University of Illinois-Chicago
University of Kansas
University of Kansas Medical Center
University of Minnesota-St. Paul
University of Missouri
University of Missouri-Kansas City
University of Oklahoma
Washburn University
Washington University in St. Louis
Westminster College
William Jewell College



PGAV Staff Overview

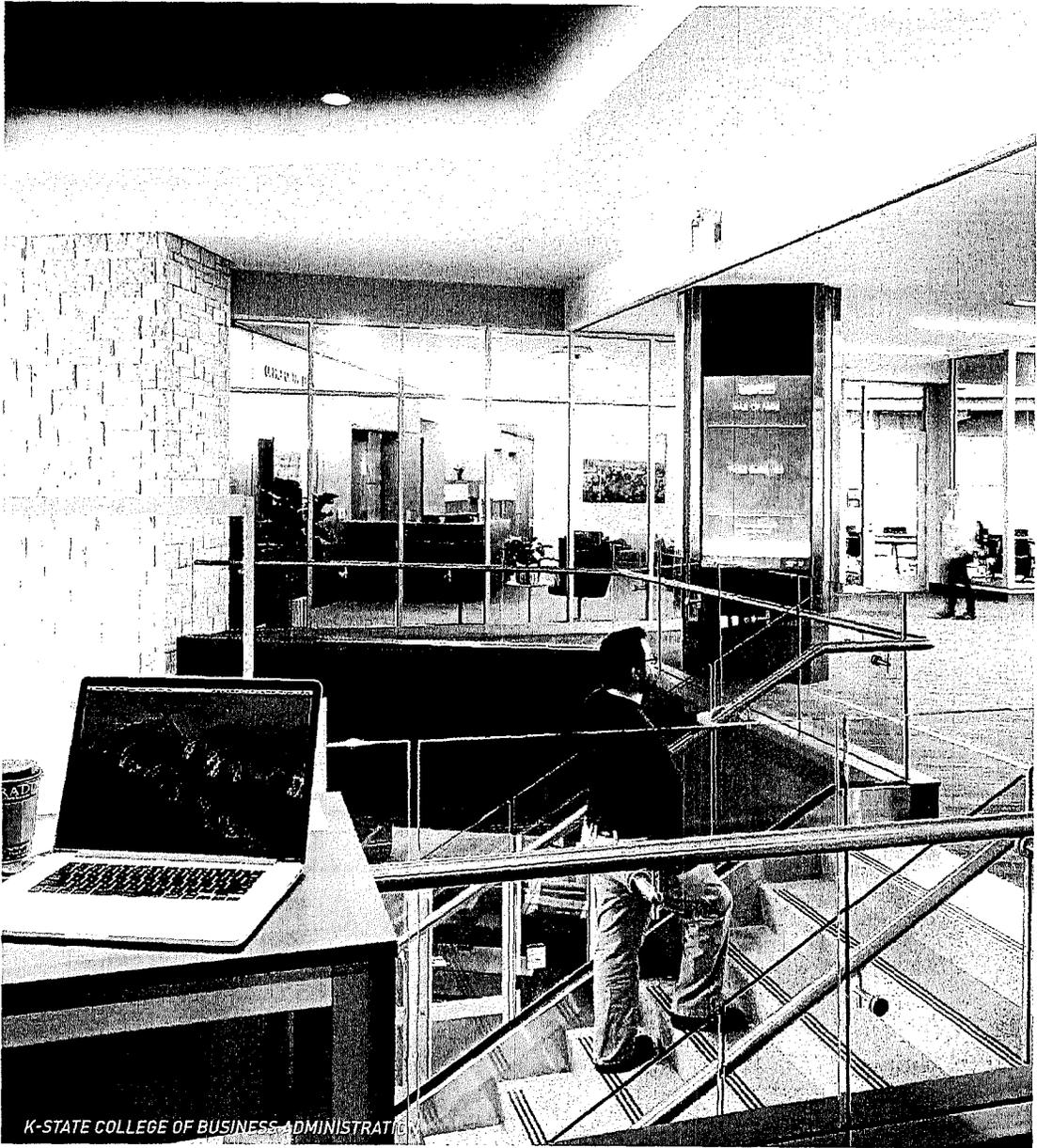
We are excited by the opportunity to work with UMKC and the Bloch School's faculty and staff to create a premier facility that seamlessly supports your mission!

PGAV provides the advantages of strong regional presence, Midwestern work ethic, and successful 30+ year history with the University of Missouri System. Our team is committed to providing continuous, responsive professional service from pre-design through project close-out.

Years in Operation: Founded in 1965
Firm Size: 145 Professionals
Locations: Westwood, Kansas
St. Louis, Missouri

Firm Leadership: Mike Schaadt, AIA, LEED AP
Steve Troester, AIA, LEED AP

- Services :
- Architecture
 - Interior Design
 - Programming
 - Master Planning
 - Planning & Urban Design
 - Sustainable Design
 - Building Renovations
 - Financial Feasibility Studies
 - FF&E Procurement
 - Construction Administration



About Henderson Engineers

Henderson Engineers is a national building systems design firm. The systems they design help bring buildings to life by providing air and water flow, lighting, power, and technology integration.

They know their work is about more than buildings. It's about the people, experiences, and potential inside. At the core of every project, you'll find them working with integrity, intelligence, and care. Henderson is as passionate about people as we are about their work, and that unique focus ensures we can meet their clients' needs. Even better, it helps them enhance the experience for the people who use the spaces they help create.

Henderson is committed to the life of each building. Their view is that no project is ever truly finished, because the building lives on. That means they stay an engaged partner even after the books are closed. When you work with them, your project becomes their project; there's always a solution and they'll work tirelessly to find it. Their technical accuracy, attention to detail, and knowledge of where the industry is headed helps drive them to make every project the best it can be.



Design Team Expertise

HIGHER EDUCATION EXPERIENCE

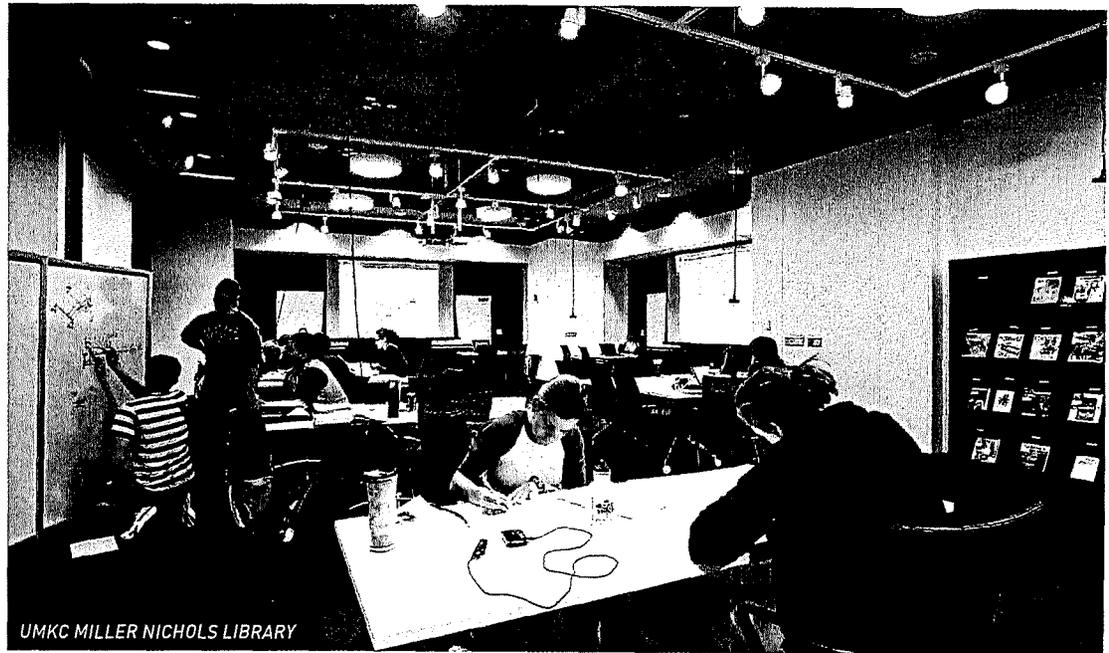
PGAV's higher education planning and design expertise spans over 40 years and includes successful projects on over 55 college and university campuses. PGAV's focus on higher education projects has immersed the firm in the trends, innovative approaches, standards and guidelines, and the ever-evolving integration of technology into the educational environment that is transforming 21C learning environments.

Over the last decade, higher education has been undergoing a massive transformation. Recent events have accelerated the change and are causing universities to redefine their very nature including how education is delivered. Many factors are impacting facility plans and priorities, including the need for spaces to support changing methodologies for teaching/learning, research, and outreach, along with shifting demographics and academic programming.

We pride ourselves in bringing industry leading expertise to help our clients address the challenges and opportunities inherent in any project and realize the greatest possible vision for their projects.

Our experience in 21C academic environments includes:

- Active Learning Classrooms
- Learning Commons
- Welcome Centers
- Student Success Centers
- Professional Schools
- Teaching & Simulation Labs
- Research Labs
- Libraries & Archives
- High Density Library Storage Facilities
- Applied Learning Centers
- Performing & Fine Arts
- Dining
- Athletics & Wellness Centers
- Administrative Workspace
- Campus Planning



SPECIALIZED EXPERTISE

PGAV brings exceptional experience in the programming, design and delivery of higher education learning environments. Our higher education portfolio includes landmark buildings across the academic and research spectrum. Our holistic planning and design approach will focus on solutions that integrate programming, architecture, building systems, and interior design. For your project, we will draw upon our depth of experience in the design of interactive higher education learning environments, and our familiarity with the Truman State campus and context to develop a design solution which is responsive to the University's functional, aesthetic, technical and budgetary goals.

We are experienced in designing for ever-evolving educational pedagogies, technologies and priorities. We will consider a range of overarching issues in order to develop a program and concept that meets today's needs while addressing how the facility can support evolving methodologies to explore, learn and collaborate, as well as shifts in the program that may occur. These issues will inform recommendations regarding building organization and infrastructure including building systems, circulation and efficiency, built-in flexibility, and design to support future adaptability. We propose to develop these issues through an integrated approach which organizes all disciplines and project stakeholders and facilitates the development of ideas and information—related to program, budget, and concept—in a timely and efficient manner.

CONSIDERATIONS

ENGAGED LEARNING

Student engagement studies on learning point to the benefits of cooperative, active, engaged learning in student success. Building design should respond to and provide learning environments that are conducive to both structured and informal interaction between students, faculty and industry partners.

REAL WORLD INFLUENCES

Real-world business influences are driving change in education (e.g. Stanford Design School, IDEO, Interdisciplinary Teams, Rapid Prototyping, Entrepreneurship, Workplace Simulation) supported by simulations. Cognitive learning models that include Cooperative Learning, Problem-Centered Instruction, Guided Design, Case Studies and Simulations are supplementing, and in some cases replacing, lecture-based learning.

ACTIVE LEARNING SPACES

Formal learning environments in academia are no longer limited to lecture halls, traditional classrooms and case study rooms. A wide-range of progressive schools have embraced the Design-School model of the design studio, which supports collaboration and nurtures innovative thinking. The new 21C environment includes active learning classrooms that support teaching in the round with flexibility to switch from lecture to group work. Technology enables students to work collaboratively at shared monitors with projection to the larger group.

INNOVATION LABS

Academic incubators, designed to foster innovation and entrepreneurship, are centers for collaboration and experimentation across campuses, and extending beyond to engage entrepreneurs and industry. These facilities support design and prototyping and include co-working space, maker space, cafes, conference rooms, lab space, space for mentorship, and concierge services.

INFORMAL LEARNING

Today's academic buildings include multiple spaces for informal learning with easy access to technology and tools for collaboration. These include a range of environments for individual and group study from lounge seating, study carrels and group study rooms, to learning commons.



K-STATE HALE LIBRARY

COMPLEX RENOVATION EXPERTISE

PGAV will utilize our expertise in the planning and design of complex building renovation and addition projects to transform the existing facility into a state-of-the-art environment for 21st Century education. We are familiar with the challenges associated with complex renovations. Successful renovations require attention to detail and consideration of multiple factors including:

- **Verification Of Existing Conditions:** Early and thorough verification and documentation of existing building systems and conditions
- **Building Code and ADA Compliance:** Confirmation of measures needed to bring aging facilities into compliance with current codes
- **Structural System Assessment:** Existing structural module column spacing and floor to floor heights drive adaptive re-use options
- **MEP&FP Systems Assessment:** Holistic strategies to address aging equipment and infrastructure and reduce operational costs
- **Exterior Envelope Assessment:** Restore integrity of roof and skin, consider opportunities for aesthetic enhancements, increase daylight and improve energy performance if needed
- **Building Safety And Security Assessment:** Integrate strategies to increase safety and security of building occupants
- **Vertical Circulation:** Address capacity, locations and condition of vertical conveyance
- **Operational Continuity & Temporary Conditions:** Identify special requirements and logistical requirements to ensure uninterrupted operations in occupied building
- **Phasing Considerations:** Develop phasing plans that respond to movement of staff, construction logistics and renovation sequence
- **Budget Considerations:** The project budget drives many decisions. PGAV prides itself on developing an understanding of the project budget early on and working hard to align project scope and budget at each phase of design.

PLANNING AND DESIGN APPROACH

PGAV’s approach and anchoring principle—holistic design—embraces a review of all qualitative and quantitative factors

by which a best performing, or best value, concept is studied, selected and developed. With our design philosophy, process and outcome are intertwined. The process is inclusive, responsive and focused on collaboration. This collaborative effort is carefully managed and documented so all stakeholders, management and campus leadership can share in generating an understanding of realities and opportunities.

Effective communication, a plan for stakeholder engagement and a clear decision-making structure will be vital to realizing project success. Our process is highly collaborative and inclusive, and we will provide the University with the benefit of our considerable experience listening carefully to the needs, concerns, and goals of all the project stakeholders to develop a holistic and exceptional design solution.

Our approach is team oriented with the goal being to achieve consensus with client participation. We understand it is our responsibility to determine what works best for Truman State by listening and interacting with your unique community of stakeholders. We will engage your stakeholders in an open, interactive process, searching for ideas that bring best value and fit within your culture. PGAV’s methodology utilizes a workshop style approach, bringing our expertise with academic facilities, knowledge of best practices, and experience in design charrettes to illustrate ideas and concepts that can be explored and tested.

We pride ourselves in our ability to listen and to translate information into innovative solutions while providing “lessons learned” from our deep and relevant project experience. We look forward to developing a thorough understanding of the intricacies of your unique facility.

SUSTAINABLE DESIGN

PGAV is a recognized leader in sustainable design and architecture with 24 recent projects that have achieved or are registered to achieve LEED certification including facilities at the Gold and Platinum levels of certification. We believe in the power of the buildings we design to demonstrate the benefits of sound environmental stewardship. We believe sustainability includes finding the right balance between sustainable features that bring the highest level of value; maximizing the long-term benefits of efficient design with the academic and budgetary goals for the project.

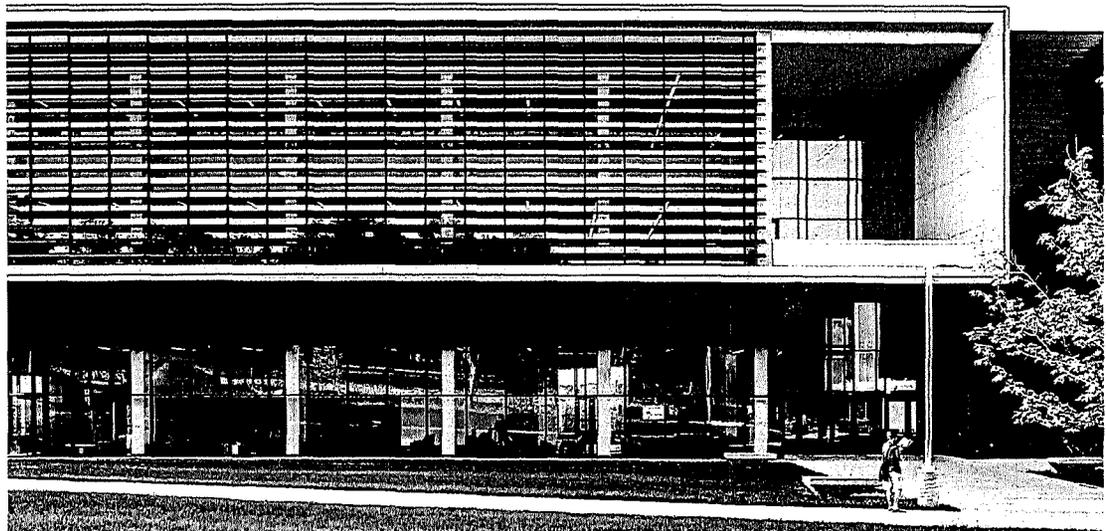
TECHNOLOGY PLANNING

The majority of PGAV's higher education projects involve the design of technology rich spaces requiring detailed planning and coordination of instructional or virtual reality technology, computers and telecommunications systems. Our project team is familiar with the latest trends in audiovisual, presentation and distance learning technology as well as student friendly furniture systems that seamlessly support technology.

PGAV's completed projects include numerous successful collaborations with leading instructional technology consultants. We will utilize a systematic approach to create forward thinking technology integration solutions that consider proven systems and the emerging technologies that will affect your project in the future. We will work collaboratively with Truman State to create an instructional technology program and supporting cost estimates to help you establish a budget for appropriate investment to meet your educational and communication needs.



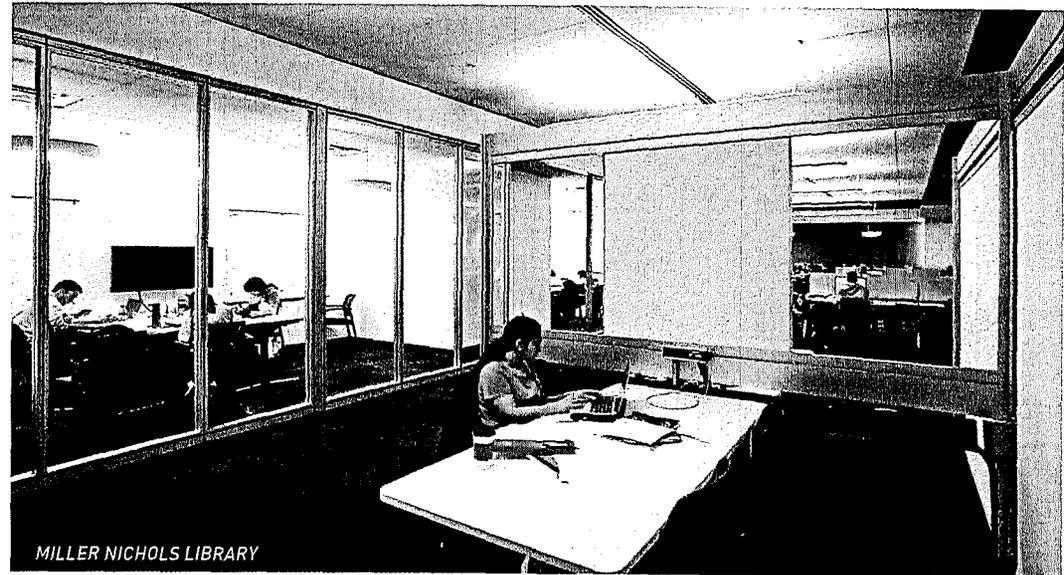
K-STATE UNIVERSITY JUSTIN HALL RENOVATION AND ADDITION – LEED GOLD CERTIFIED



UMKC MILLER NICHOLS LEARNING CENTER – LEED CERTIFIED

COST EFFECTIVE DESIGNS

PGAV maintains an exceptional track record of cost control. We have programmed, designed and built over 20 higher education projects at or below budget in the last four years. Our repeat clients are a testament to our success in designing to budget, accurately estimating costs, and delivering technically demanding projects at a consistently high level of quality.



RECENT PROJECTS — BUDGET VS. BIDDING

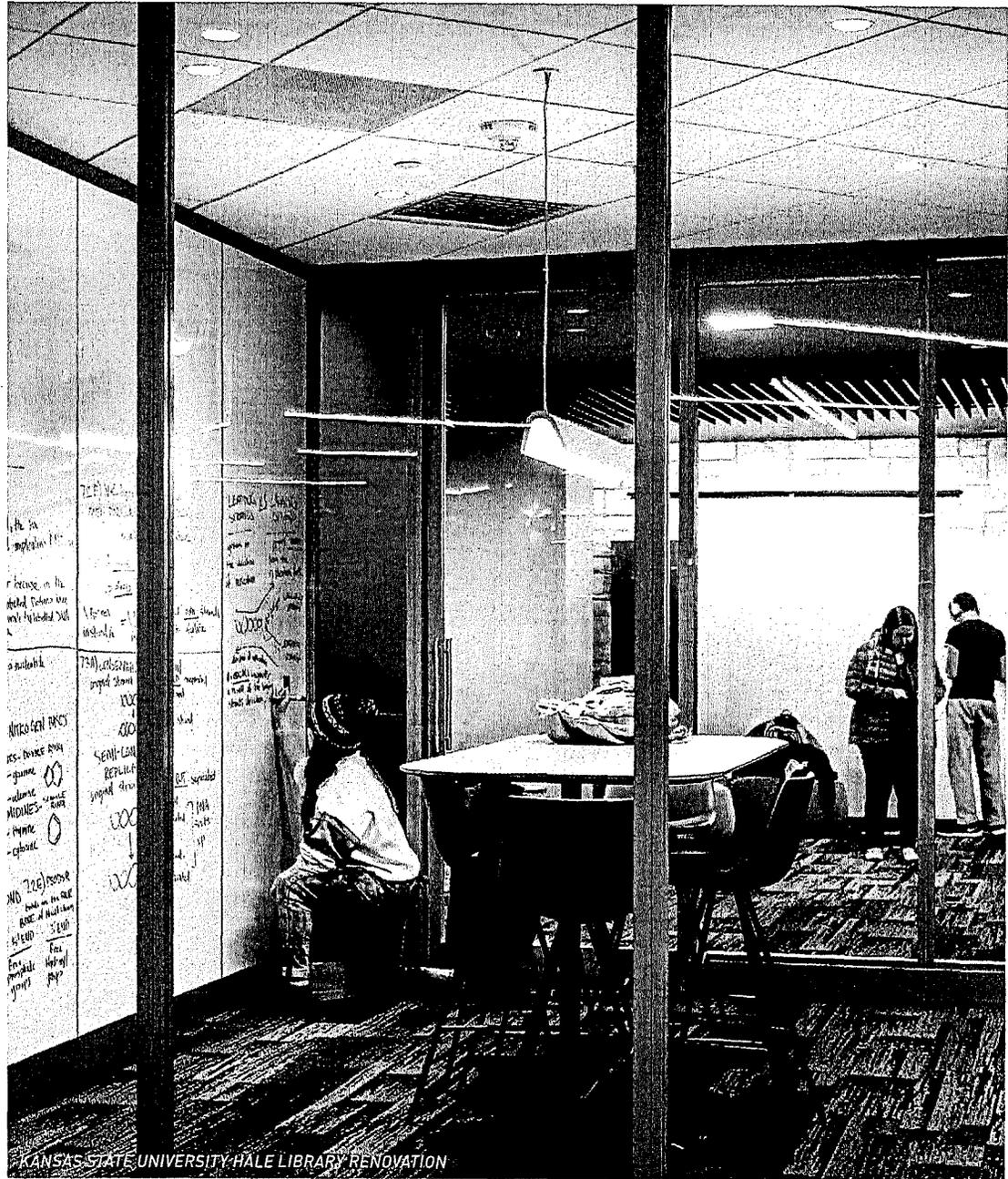
	BID DATE	BUDGET	BID/ACTUAL	RENOVATION	EXPANSION	NEW
Mulvane Hall Center for Collaborative Science Education Baker University	2011	\$9.0M	\$8.8M	●	●	
Justin Hall College of Human Ecology Kansas State University	2011	\$4.1M	\$3.9M	●	●	
Miller Nichols Library and Learning Center Transformation UMKC	2012	\$31.8M	\$31.8M	●	●	
Morgan Hall Welcome Center Washburn University	2013	\$14.1M	\$14.2M	●	●	
Mosier Hall Institute for Comparative Medicine Kansas State University	2013	\$6.0M	\$5.5M	●		
Early Childhood Center Blue Valley Schools	2013	\$16.3M	\$16.5M	●	●	
Center for Networked Learning Fort Hays State University	2013	\$8.9M	\$8.1M			●
College of Business Administration Kansas State University	2014	\$40.8M	\$34.5M			●
SOM Center for Translational Neuroscience University of Missouri	2015	\$3.3M	\$2.7M	●		
Spencer Hall & School of Biological Sciences Renovation UMKC	2016	\$17.6M	\$17.5M	●		
Center for Applied Technology Fort Hays State University	2016	\$12.9M	\$11.1M			●
Baldwin Hall Renovation Truman State University	2016	\$12.1M	\$11.7M	●		
SOM First Floor Research Laboratories University of Missouri	2017	\$2.6M	\$2.5M	●		
Pickler Library Renovation Truman State University	2018	\$2.6M	\$2.6M	●		
Student Center & Library Renovation JCCC	2018	\$13.7M	\$13.0M	●	●	
Department of Agriculture Lab Kansas State University Foundation	2019	\$7.2M	\$7.2M			●

LIFE CYCLE COST ANALYSIS

Life cycle cost analyses are performed for the majority of our projects to meet energy budget targets and to identify and determine the economic effects, advantages and disadvantages of alternative building systems and approaches. We utilize a values-based process which is founded upon:

- Full team participation and collaboration
- Evaluation of building systems which considers costs over the course of the system's service life—from acquisition, through operation/maintenance to disposal
- Tailoring the LCCA methodology to meet project needs—ranging from simple “back of the envelope” studies to detailed assessments with researched input data and quantitative analysis

This LCCA method allows our team to develop building system strategies which balance scope, budget, quality and long-term performance. PGAV will lead the effort to identify and answer key questions, establish priorities, explore and evaluate options, and develop information and recommendations to inform decision-making.



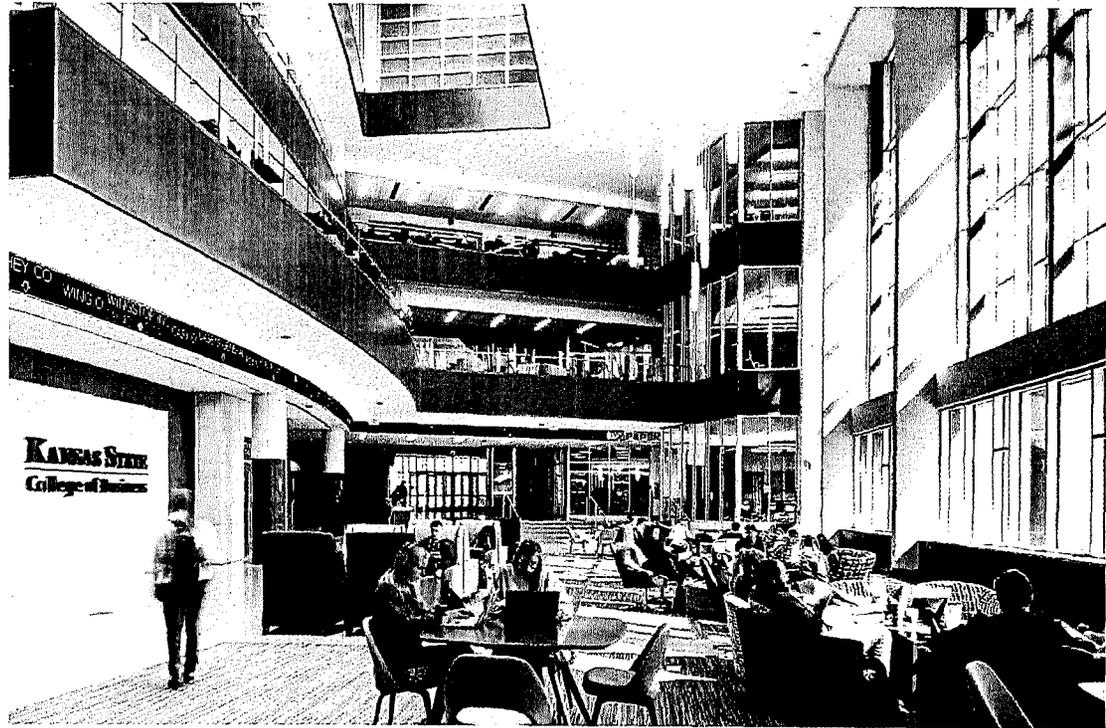
COST ESTIMATING / DESIGN WITHIN BUDGETS / MEETING PROPOSED SCHEDULES

We routinely deliver higher education projects within budget and on schedule. PGAV has a long history helping clients to establish and verify budgets for major projects. We recognize that early alignment of the scope of work and budget is essential to a successful project. Developing a comprehensive understanding of the anticipated scope of work and all relevant factors that have an impact on cost are essential in the establishment of an appropriate project budget that will lay the foundation for success in subsequent design phases.

A complete understanding of the construction cost and total project budget is the foundation of each project's cost control plan. We utilize estimating tools and techniques, including data from recently bid and/or completed projects, and an analysis of the project's major cost drivers to develop a comprehensive understanding of cost. Construction cost drivers include; program area and type of space, building efficiency ratios, building systems, sitework and utilities, schedule, escalation for inflation, location, construction procurement method, and Owner's bidding requirements.

Our team will develop and manage appropriate estimating and construction contingencies from start to finish, effectively managing risk and ensuring design phase continuity. We utilize Building Information Modeling to develop quantity take-offs to maximize accuracy in estimating and competitiveness in the bidding process. We also apply strategies for bid day success including designing to 95% of the available construction budget and creating bid alternates for additional bid protection.

Maintaining a project's schedule requires strong project management and thoughtful use of our stakeholder's time during the design and review process. Project Manager Steve Cramer, brings exceptional and directly relevant experience with the design and execution of demanding assignments and a gift for organizing and directing the efforts of integrated project teams. We will develop realistic milestones for achieving design phase completion and design reviews and will work in a spirit of partnership with the Contractor to keep the project on schedule.



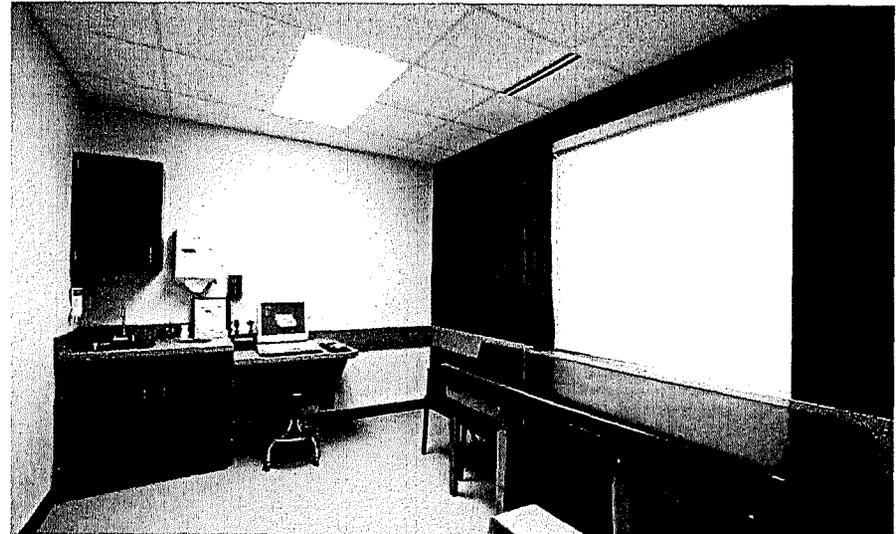
KANSAS STATE UNIVERSITY COLLEGE OF BUSINESS ADMINISTRATION

WORKING WITH CONTRACTING PARTNERS

PGAV has a successful track record of experience with multiple project delivery models, including Design/Bid/Build, Construction Manager at Risk, Construction Manager Agency, and Design-Build contracts. We are comfortable working in any of these arrangements and routinely provide guidance to our clients regarding the advantages and disadvantages of adopting a particular delivery method for a specific project. Our consistent goal is to help our clients develop and complete their projects in a timely, cost effective manner while achieving a high level of quality and the greatest level of value.

MANAGING PERSONNEL/WORKLOAD

PGAV's architectural and engineering project team is available and prepared to begin work immediately. The timing of your project fits well with our current workload and we do not foresee any limitations in our ability to service your project. Due to COVID-19 public health recommendations we currently have some staff working from home, while others remain in the office. We remain committed to providing the same level of service our clients have come to expect from us, despite current challenges brought about by the pandemic. We are confident in our ability to work virtually with you as required over the course of this assignment using a variety of digital meeting and collaboration tools to enhance our design process while maintaining all necessary safety protocols.





STEVE TROESTER

AIA, LEED AP
 PRINCIPAL-IN-CHARGE
 PGAV ARCHITECTS
 913.362.6500; steve.troester@pgav.com

BIOGRAPHY

As Principal-in-Charge, Steve will provide executive leadership to the design team. Steve's exceptional communication and design skills, combined with his ability to define and solve problems, allow him to effectively lead the project team and stakeholder groups through the exploration, design and consensus building process. He is an effective team leader who recognizes the importance of marshaling the creative energy, experience, and skill of his diverse project team in order to create solutions which respond to his clients' mission and strategic goals.

RELEVANT EXPERIENCE

Truman State University – Kirksville, Missouri

Pickler Library Modernization; Baldwin Hall Renovation; McClain Hall Elevator Replacement

Kansas State University – Manhattan, Kansas

Hale Library Recovery and Renovation; College of Business Administration; Justin Hall College of Human Ecology Renovation and Addition

MidAmerica Nazarene University – Olathe, Kansas

Cunningham Student Center; Athletics Facilities Master Plan

Fort Hays State University – Hays, Kansas

Student Success Center; Center for Applied Technology; Hammond Hall Center for Networked Learning

Benedictine College – Atchison, Kansas

Engineering & Allied Science Renovation & Expansion

Johnson County Community College – Overland Park, Kansas

Carlsen Center for the Arts; Student Center Renovation and Addition

Washburn University – Topeka, Kansas

Morgan Hall Welcome Center; KBI Forensic Science Center



STEVE CRAMER

AIA, LEED AP
 PROJECT MANAGER
 PGAV ARCHITECTS
 913.362.6500; steve.cramer@pgav.com

BIOGRAPHY

Steve is a Project Manager for many of the firm's most technically challenging and successful higher education projects. His primary goals are to ensure his client's vision is realized, communications occur seamlessly, and milestone deliverables are complete and submitted on schedule. A Vice President of PGAV, Steve brings more than 15 years of leadership and design experience to his wide-ranging higher education, library and laboratory assignments.

RELEVANT EXPERIENCE

Truman State University – Kirksville, Missouri

Pickler Library Modernization; Baldwin Hall Renovation; McClain Hall Elevator Replacement

Kansas State University – Manhattan, Kansas

College of Business Administration; College of Agriculture Facilities Master Plan; Hale Library Recovery and Renovation; Mosier Hall Research Laboratory Renovation; College of Vet Medicine Trotter Hall Renovation; Waters Hall Agricultural Economics Renovation

University of Missouri-Kansas City

School of Biological and Chemical Sciences Renovation; SCE Robert W. Plaster Center Programming and Owner's Technical Consultant; Bloch Heritage Hall Renovation; Miller Nichols Library Transformation

University of Missouri – Columbia, Missouri

SOM Center for Translational Neuroscience; SOM 1st Floor Lab Renovation

Oklahoma State University – Stillwater, Oklahoma

DASNR New Frontiers Ag Hall; DASNR New Frontiers Ag Hall Feasibility Study

Missouri University of Science & Technology – Rolla, Missouri

General Services Building Renovation



TIM OVERSTREET

AIA, LEED AP
PROJECT ARCHITECT
PGAV ARCHITECTS

BIOGRAPHY

Tim's architectural abilities range from conceptual design to construction administration on educational, institutional and public buildings. He has a strong background in virtual modeling, and leverages BIM extensively in the design and construction administration process. As the project progresses, he will ensure design concepts and client goals are carried through in the details. Tim excels at clear client communication and design abilities that demonstrate a strong understanding of the realities of the built environment.

RELEVANT EXPERIENCE

Truman State University – Kirksville, Missouri

McClain Hall Elevator Replacement

City of Kirksville, Missouri

Kirksville Aquatic and Community Center Renovation and Addition*

Garmin – Olathe, KS

600,000 square foot complex renovation*

State University of New York – New Paltz, New York

Student Athletic Center Renovation*

State University of New York – New York, New York

College of Optometry Renovation*

Hunter College – New York, New York

Dining Floor Renovation*

West Point Military Academy – West Point, New York

Constitution Island Historic House Renovation & New Education Center*

**Project completed prior to joining PGAV Architects*



DAVE WORTHINGTON

RA
PROJECT DESIGNER
PGAV ARCHITECTS

BIOGRAPHY

Dave is a registered architect with over 25 years of professional experience. He has successfully directed project teams and has completed small to complex projects within demanding schedule and budget constraints. His well-rounded perspective is valuable on both new ground-up construction as well as renovation projects. Dave has proven experience in all aspects of budget development, programming and cost estimating at all phases of a project.

RELEVANT EXPERIENCE

Truman State University – Kirksville, Missouri

Pickler Library Renovation; Baldwin Hall Renovation

Priority Care Doctor Offices – Kansas City, Missouri

Medical Office Building

Johnson County Community College – Overland Park, Kansas

Student Center Renovation and Addition; Integrated Resource Center;
Bookstore Warehouse Addition

Fort Hays State University – Hays, Kansas

Center for Applied Technology and Sculpture; Student Success Center;
Hammond Hall Center for Networked Learning

MidAmerica Nazarene University – Olathe, Kansas

Cunningham Student Center

Baker University – Baldwin City, Kansas

Boyd Center for Collaborative Science Education

Kansas State University – Manhattan, Kansas

Justin Hall Renovation and Addition; Hale Library Recovery and Renovation

University of Missouri-Kansas City

Miller Nichols Library and Learning Center Transformation



ANDREA BRUNDIS

IIDA, NCIDQ #33142
 INTERIOR DESIGNER
 PGAV ARCHITECTS

BIOGRAPHY

Andrea's ability to see the big picture at each step of the design process is key to her success as an interior designer. She excels at collaborating with her team members while focusing on the details—which is instrumental in establishing a design direction that properly integrates interior architecture, lighting, finishes and FF&E. Andrea's work includes a range of higher education environments. Her clients enjoy collaborating with Andrea to establish their vision and then seeing the results. Andrea believes that every space should be as functional as it is beautiful.

RELEVANT EXPERIENCE

Truman State University – Kirksville, Missouri

Pickler Library Renovation; Baldwin Hall Renovation

Johnson County Community College – Overland Park, Kansas

Student Center Renovation and Addition; Integrated Resource Center;
 Gymnasium Improvements; New Campus Entrance; Carlsen Center Renovation

University of Missouri – Columbia, Missouri

SOM Center for Translational Neuroscience; SOM 1st Floor Lab Renovation

Fort Hays State University – Hays, Kansas

Center for Applied Technology and Sculpture; Student Success Center

University of Missouri-Kansas City

School of Biological and Chemical Sciences Renovation; SCE Robert W. Plaster
 Center Programming and Owner's Technical Consultant

Kansas State University – Manhattan, Kansas

College of Business Administration; Hale Library Recovery and Renovation;
 College of Vet Medicine Trotter Hall Renovation; Classroom Design Standards

Washburn University – Topeka, Kansas

KBI Forensic Science Center



CARL HOLDEN

PE, LEED AP
 MEP PRINCIPAL
 HENDERSON ENGINEERS

BIOGRAPHY

Carl is not only known for being responsive and thorough, but he's also classified as the multitasking master. His incredible efficiency and passion for engineering has shaped him into the mentor and mechanical lead he is today. In addition to advocating for innovation and productivity, his hands-on method of leadership is key in bringing best practices to building system designs that are in the client's best interest. With a strength in balancing creativity with function, Carl successfully leads his teams in finding the right solution for every design.

RELEVANT EXPERIENCE

Johnson County Community College – Overland Park, Kansas

Student Center Renovation and Addition; Integrated Resource Center;
 Gymnasium Improvements; New Campus Entrance and Athletics Complex;
 Turnkey Project Services for Energy & Infrastructure Upgrades

Towson University – Towson, Maryland

Burdick Hall

University of Arkansas – Fayetteville, Arkansas

Epley Center for Health Professions Mechanical Renovation

Evangel University – Springfield, Missouri

Ashcroft Center Health Sciences & Athletics Master Plan

University of Kansas Medical Center – Kansas City, Kansas

Health Education Building; Simulation Lab Fitout

University of Central Missouri – Lees Summit, MO

Innovation Campus Classroom Renovation

Ozarks Technical Community College – Springfield, Missouri

Center for Advanced Manufacturing



CHRIS GREER

PE, LEED AP
MEP PROJECT MANAGER/MECHANICAL
ENGINEER
HENDERSON ENGINEERS

BIOGRAPHY

Chris’s exposure to multiple practices gives him the unique perspective of the best practices employed across the industry. His systems design experience includes, but is not limited to: building internal and envelope heat gain and loss calculations, energy modeling, life-cycle cost analysis. As project manager, Chris will delegate responsibilities across the design team, manage client and owner expectations, code modification requests, design change directives, and all other construction-related topics concerning the design.

RELEVANT EXPERIENCE

University of Kansas Medical Center – Kansas City, Kansas

Health Education Building; Simulation Lab Fitout

University of Kansas – Lawrence, Kansas

Burge Student Union Collaboration Space

Pittsburg State University – Pittsburg, Kansas

McPherson Hall Lecture Hall

Kansas City University – Kansas City, MO

Center for Medical Education Innovation

MidAmerica Nazarene University – Olathe, Kansas

Uphaus Hall, Bell Center, & Cook Center Evaluation

Pittsburg State University – Pittsburg, Kansas

Kelce College of Business Renovation & Addition



HALEY RIECK

PE
ELECTRICAL ENGINEER
HENDERSON ENGINEERS

BIOGRAPHY

Haley’s experience encompasses a wide range of educational, commercial, and government facilities. Her education experience includes both new construction and complex renovation projects. A team player, she works closely with the entire design team to create a flexible 21st century learning environment and an electrical system that supports the space programming. She believes the best solution takes into consideration the client’s needs and goals, construction timeline, budget, and constructability.

RELEVANT EXPERIENCE

Johnson County Community College – Overland Park, Kansas

Student Center Renovation and Addition; Integrated Resource Center;
Gymnasium Improvements; New Campus Entrance and Athletics Complex;
Turnkey Project Services for Energy & Infrastructure Upgrades

University of Kansas Medical Center – Kansas City, Kansas

Health Education Building; Simulation Lab Fitout

University of North Carolina – Chapel Hill, North Carolina

Campus Recreation Master Plan

Lee’s Summit R-7 SD – Lees Summit, Missouri

High School Athletics Upgrades; Summit Lakes Middle School Renovation

North Kansas City SD – North Kansas City, Missouri

North Kansas City High School Renovation

Bright Horizons – Multiple Locations

Relevant Page



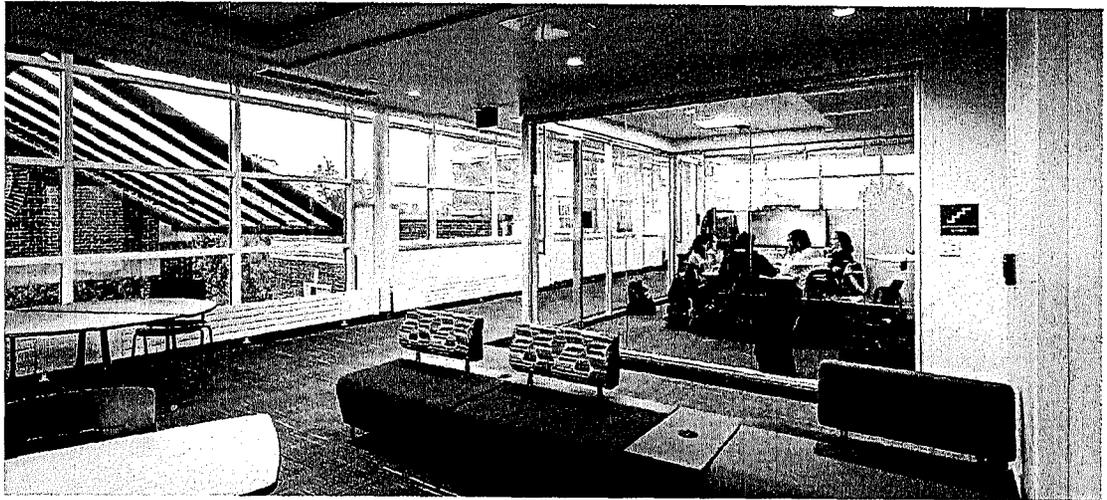
BALDWIN HALL RENOVATION

► Truman State University

Baldwin Hall occupies a prominent position on Truman State's main quadrangle and houses classrooms, administrative functions, and faculty offices for the School of Arts and Letters, as well as Baldwin Auditorium and the annual Kohlenberg Lyceum Series. PGAV was hired to renovate the 3-story facility removing several decades worth of tired renovations and restoring Baldwin to its former glory. The reimagined facility addresses Truman State's most pressing needs and advances the University's mission while serving over 2000 students daily. The renovation focused on expanding the building lobby, renovating classrooms and labs for contemporary instruction, improving study spaces and modernizing the HVAC and life safety systems throughout the building. The project included the addition of a new stair tower to address exiting deficiencies, and was designed to blend seamlessly with the historic building.

MAJOR FEATURES

- Comprehensive technical renovation featuring teaching, classroom, office and collaborative spaces
- Experiential and evidence-based learning environments for education
- Flexible design features independent study and team project spaces with the ability to adapt to emerging trends and needs
- Renovated and expanded entry lobby for university and community events



LOCATION

Truman State University
Kirksville, Missouri

BUILDING SIZE

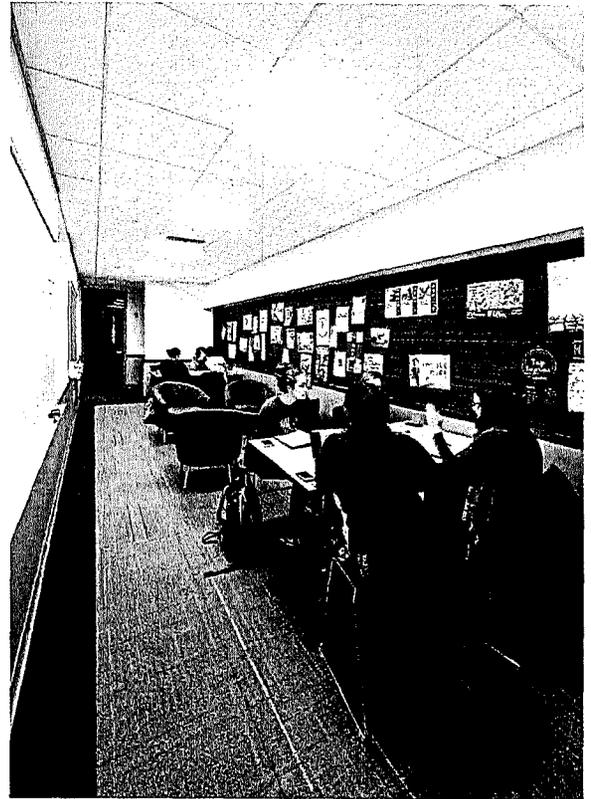
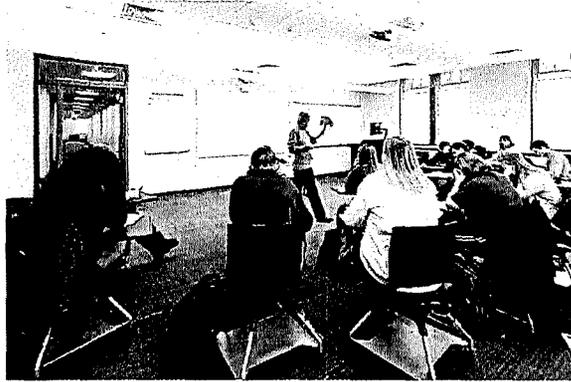
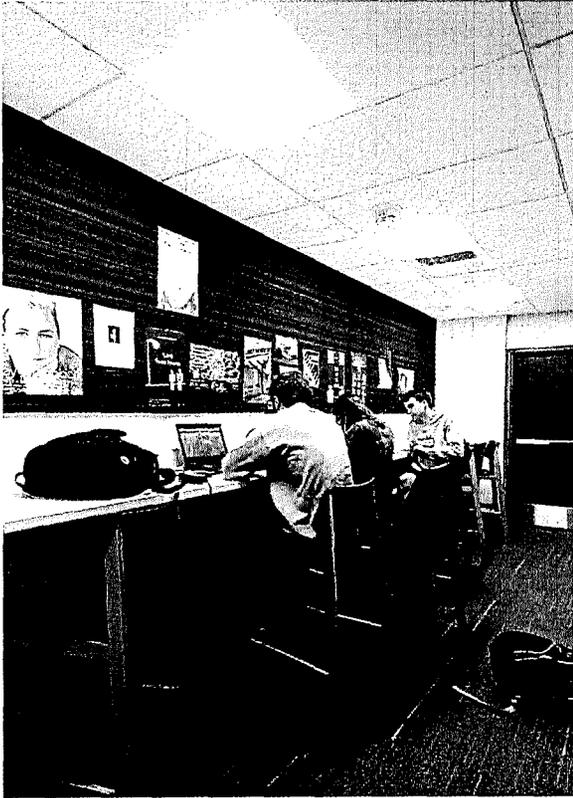
85,700 GSF Renovation

CONSTRUCTION COST

\$12,500,000

COMPLETION DATE

2017

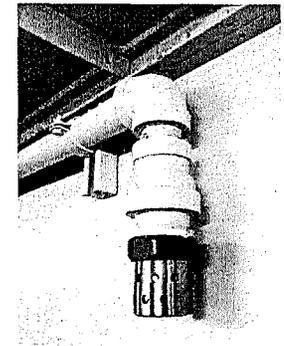
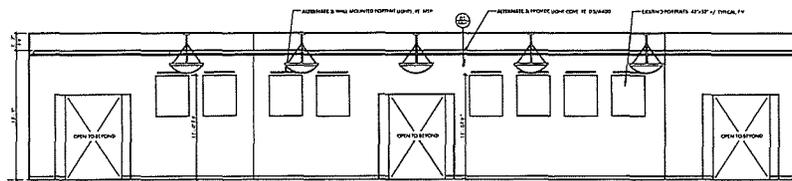


PICKLER LIBRARY MODERNIZATION

► Truman State University

PGAV with McClure Engineering modernized the building’s existing fire protection systems, including fire suppression, fire alarm, and security system interface. These systems were intricately woven into the building’s architectural features, such as ceiling plenums and wall cavities. To execute the work, the team considered strategies for carefully removing drywall and acoustical ceilings, drywall partitions, and interior finishes as required to demolish existing systems and install new. Once new systems was in place, ceilings and walls were restored to their original condition.

During the modernization process, Truman State asked for upgrades to the lighting on the 3rd Floor. Pendant lights were replaced and a ceiling cove was installed to support the installation of indirect uplighting. Wall mounted art lights were added to illuminate relocated portraits.



LOCATION

Truman State University
Kirksville, Missouri

PROJECT SIZE

142,574 SF Modernization

CONSTRUCTION COST

\$2,600,000

COMPLETION DATE

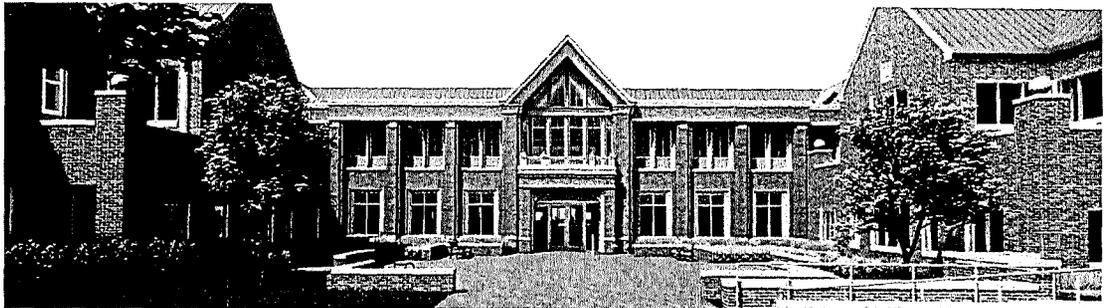
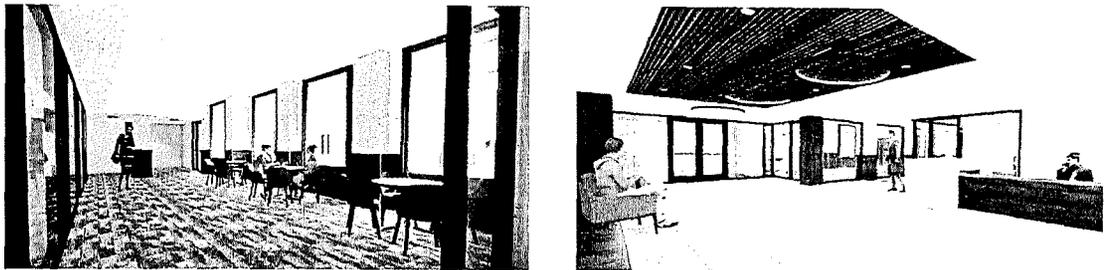
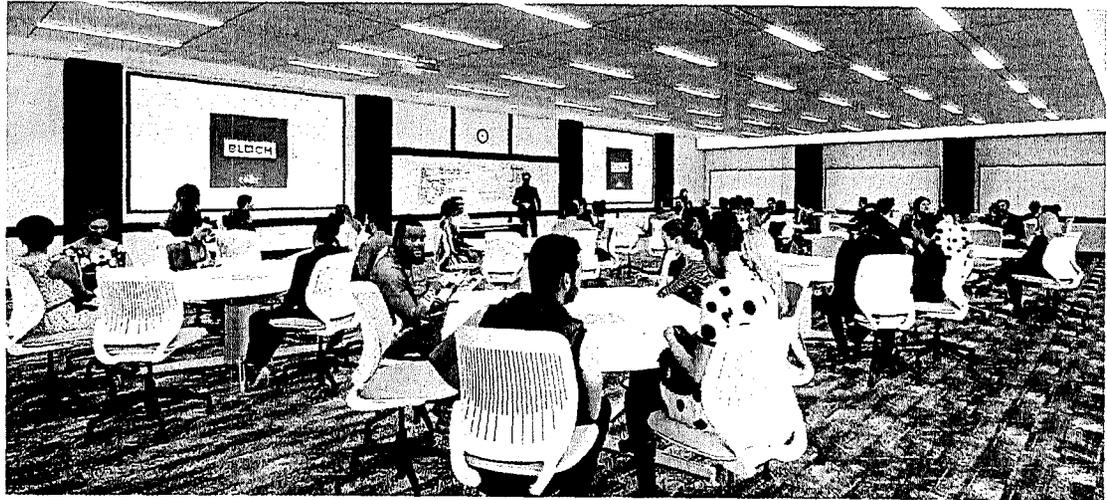
2018

BLOCH HERITAGE HALL RENOVATION AND ADDITION

▶ University of Missouri - Kansas City

Bloch Heritage Hall (BHH) is the original home of UMKC’s Henry W. Bloch School of Management, which includes the historic Shield Mansion built in 1909, as well as a significant building addition completed in 1987. Bloch Executive Hall (BEH) was constructed immediately north of Bloch Heritage Hall in 2013.

The current project will renovate the majority of BHH, and will expand the facility with three strategic building additions: a new stair and elevator tower will be added at the northwest corner to create a stronger west building entrance and improved vertical circulation; a new technology-enabled active learning classroom northeast of BHH will enhance instructional capabilities for the Bloch School, while also physically connecting BHH and BEH; and an east addition will provide additional space for student services and faculty offices, while reimagining the building’s east entrance and elevation. The renovations and additions are designed to provide 21st century learning environments, while complementing the historic character of the original facility. The project will also address approximately \$6.5M in deferred maintenance.



LOCATION	PROJECT SIZE	CONSTRUCTION COST	COMPLETION DATE
UMKC Kansas City, Missouri	52,000 NSF Renovation 10,500 GSF Addition	\$10,355,000 (estimate)	Spring 2022

STUDENT CENTER & INTEGRATED RESOURCE CENTER RENOVATIONS

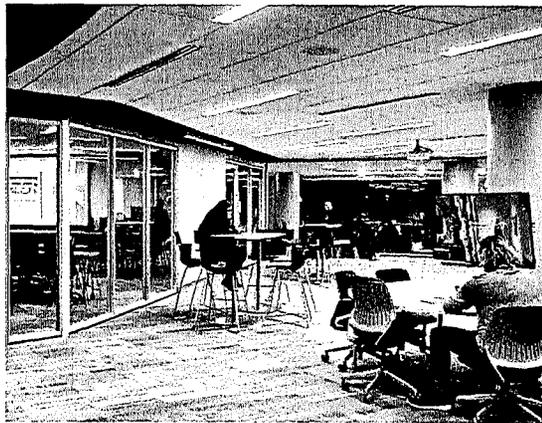
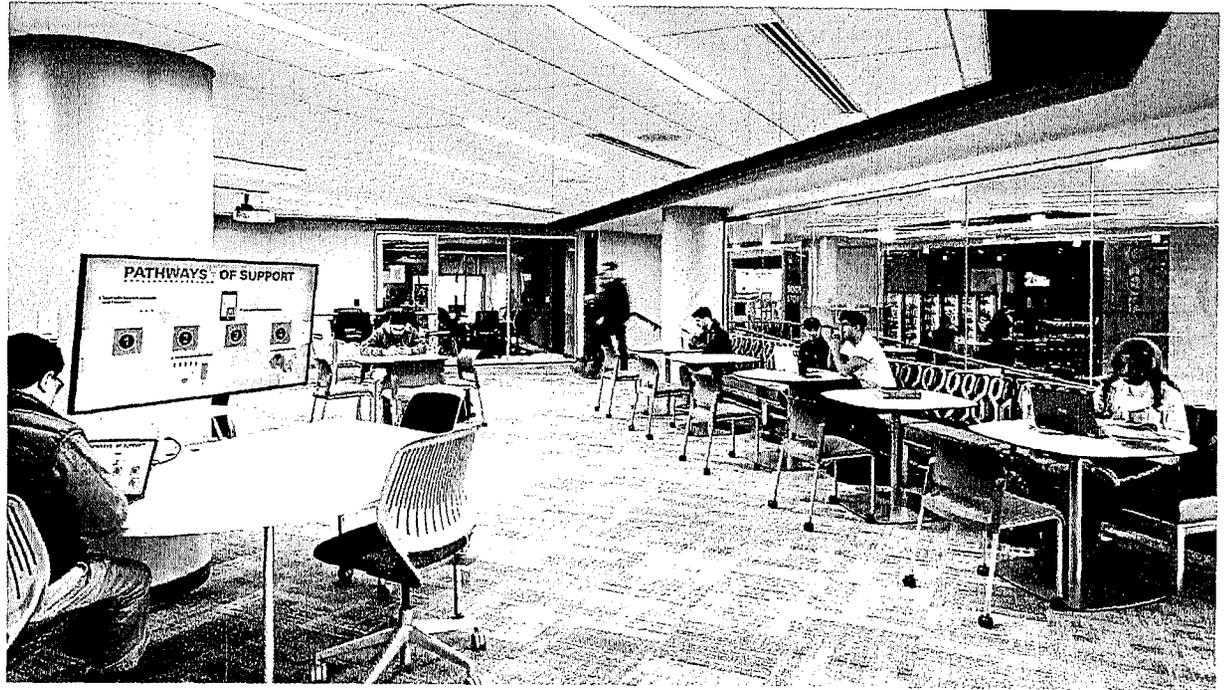
► Johnson County Community College

PGAV provided programming, design and construction administration services for an addition and renovation to JCCC's Student Center, as one of several campus improvement projects undertaken by the College to enhance the campus and meet the changing needs of 21C students.

The Student Center expansion and renovation focuses on redefining the front door of the campus as the first stop for students and visitors. The project scope includes parking and landscape improvements and expands and transforms the existing first floor to integrate key campus activities of recruitment and admissions, student life, and student services, to create a new dynamic in the Student Center.

The addition was designed to contrast with the existing building and utilizes limestone panels found in newer buildings on the campus which has predominantly brick structures. Project included:

- Welcome center, presentation and orientation room
- Multi-purpose collaboration space
- Centralized student services including Bursar Office
- Retail hub including cafe, bookstore, C-Store and bank



LOCATION

Johnson County Community College
Overland Park, Kansas

BUILDING SIZE

64,500 GSF Renovation

CONSTRUCTION COST

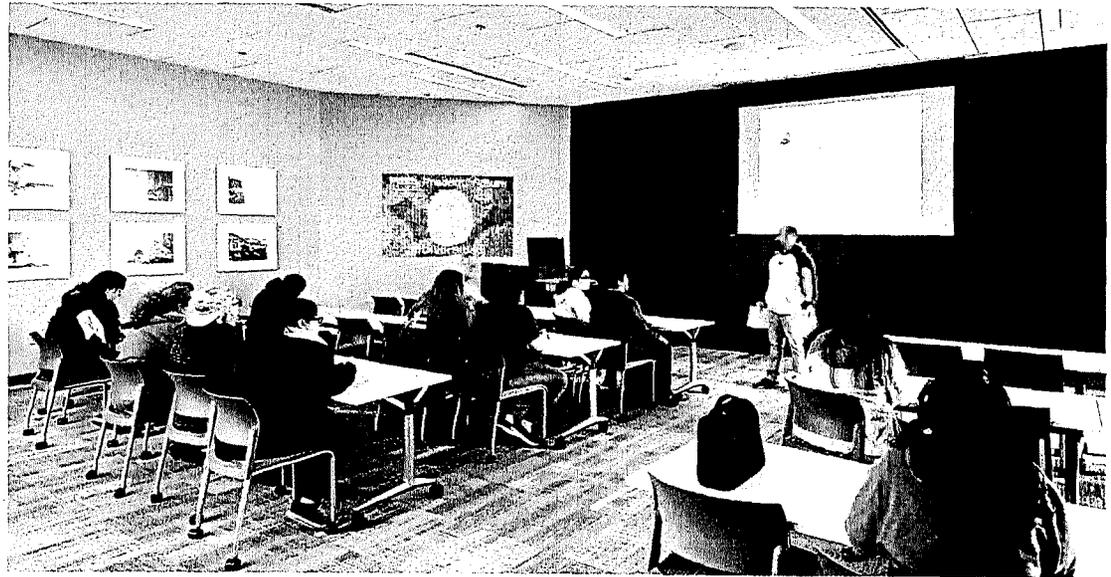
\$13,000,000

COMPLETION DATE

2020

The Integrated Resource Center provides a one-stop academic support facility for students in the subjects of science, math, language, writing and academic achievement co-located alongside the resources of campus academic library. Project included:

- Central concierge check-in desk
- Active tutoring and collaboration space
- New library circulation desk
- Faculty office and support space



MORGAN HALL RENOVATION & ADDITION

► Washburn University

Morgan Hall has served as Washburn University's academic and administrative hub since it opened in 1956. PGAV was engaged to assist Washburn with the functional and architectural transformation of this aging campus landmark into a welcoming, multi-functional campus center focused on celebrating "Ichabod Spirit" and streamlining access to student services.

The re-imagined facility includes a "One Stop Shop" for seamless access to admissions, financial aid, academic advisers, student life and student health services. At the heart of the building is a dramatic new living room which opens to study space on the floor above. A tower and entry plaza establish a new campus gateway, and the architectural design honors distinctive materials and elements found on campus.



LOCATION

Washburn University
Topeka, Kansas

PROJECT SIZE

28,000 GSF Addition
32,800 GSF Renovation

CONSTRUCTION COST

\$14,500,000

COMPLETION DATE

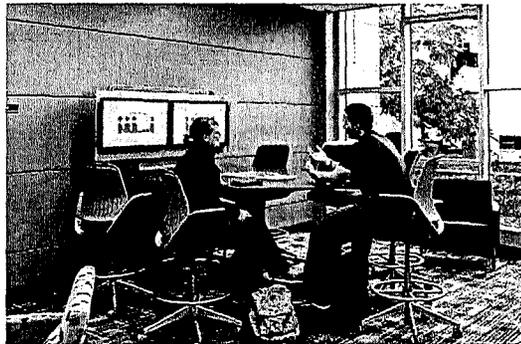
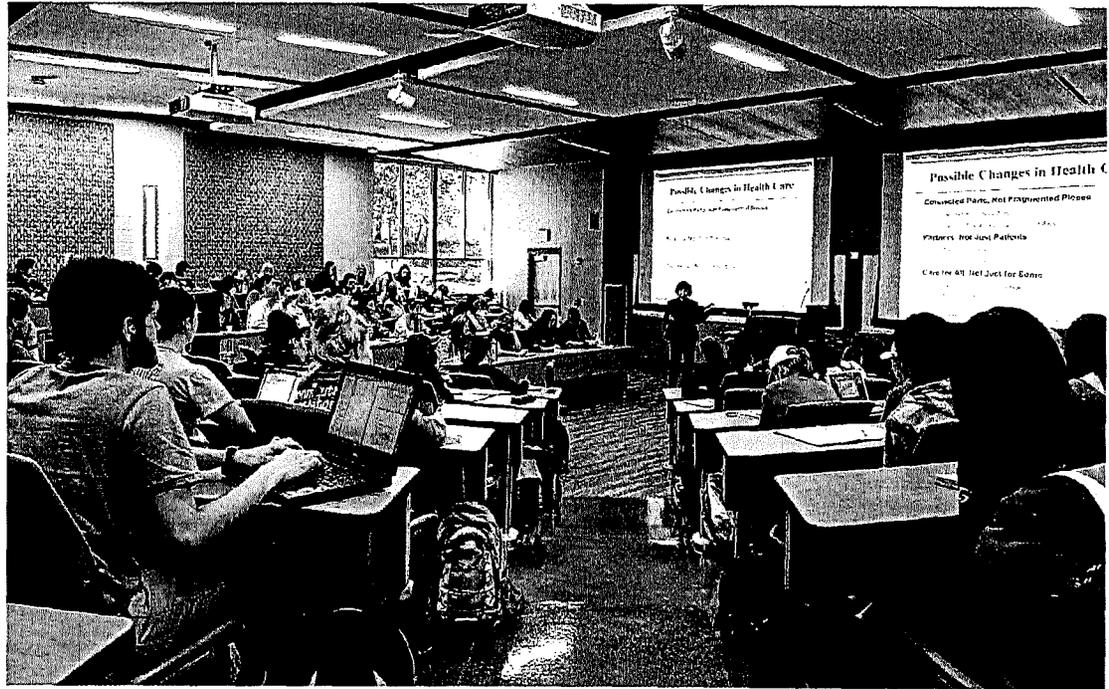
2015

JUSTIN HALL RENOVATION & ADDITION

▶ Kansas State University

Justin Hall is the research and teaching center of the College of Human Ecology at Kansas State University. The three-story limestone structure, completed in 1960, served the College well without major renovations until 2010, when PGAV designed an addition to meet the College's expanded enrollment, programs and mission.

The completed facility emphasizes student engagement and collaboration. The formal learning spaces support current teaching methodologies with flexible technology systems. Additional program elements include: student study space; seminar rooms; student commons; student services center; and administrative offices – renovated to increase transparency for students. The project includes renovation of the existing building at the point of connection with the addition.



LOCATION	BUILDING SIZE	CONSTRUCTION COST	COMPLETION DATE
Kansas State University Manhattan, Kansas	17,700 SF	\$4,000,000	2012

STUDENT SUCCESS CENTER

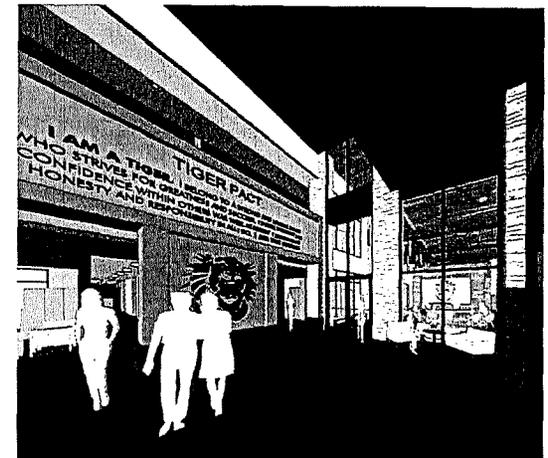
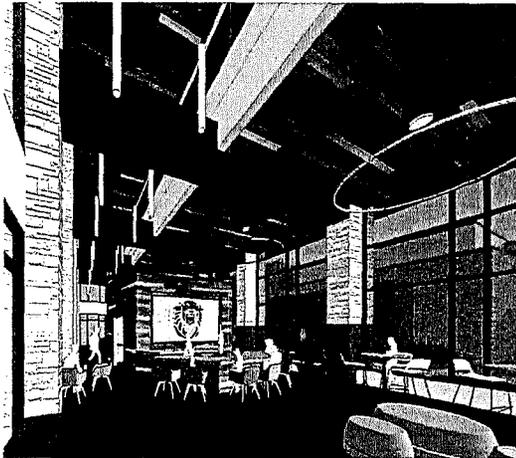
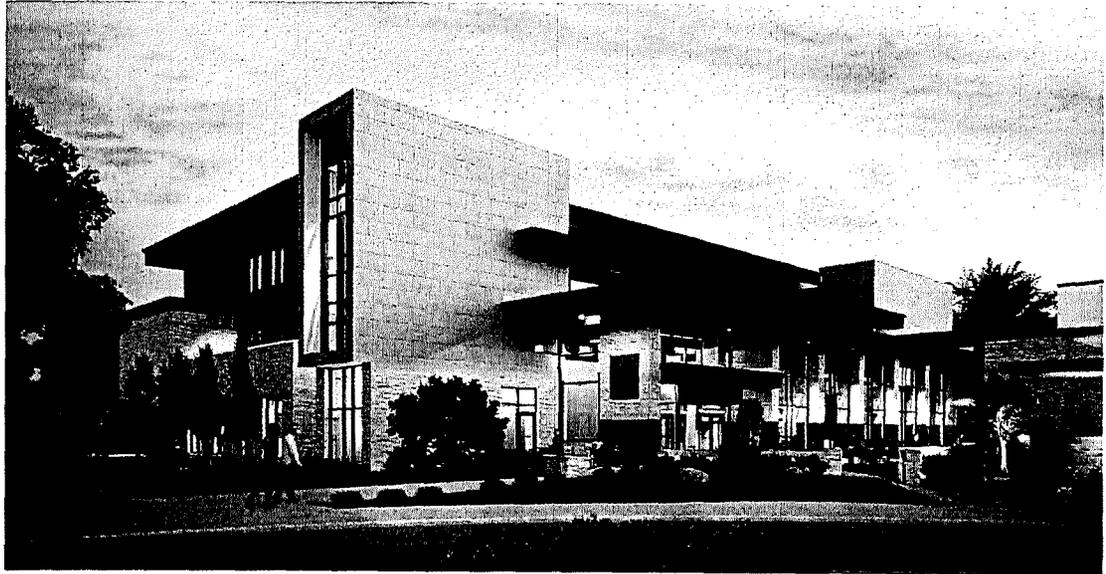
► Fort Hays State University

The new Student Success Center at Fort Hays State University offers students a welcoming, modern, space to meet the evolving needs of 21st century students. The three story addition to the Student Union will be the new home for:

- Welcome Center
- Academic Advising & Career Exploration
- Tutoring & Testing Services
- Career Services & Internships
- Student Health Services
- Student Government Association & Organizations
- Center for Civic Leadership

The first floor will focus on the recruitment and retention of students with a grand new Welcome Center to greet prospective students and alumni as well as various student services noted above.

Located on the third floor, the Student Wellness Center will provide confidential and comprehensive clinical and mental health services to the student body. A discrete patient flow, extended hours and a new training room empower students to take control of their health.



LOCATION

Fort Hays State University
Hays, Kansas

PROJECT SIZE

39,600 GSF

CONSTRUCTION COST

\$11,000,000 (estimate)

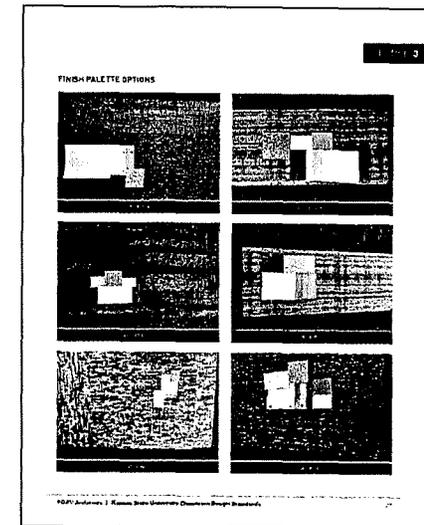
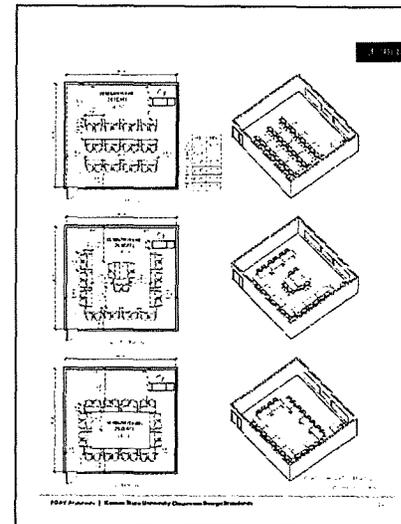
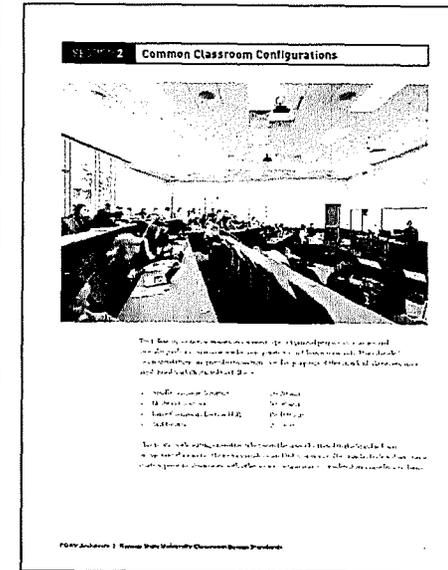
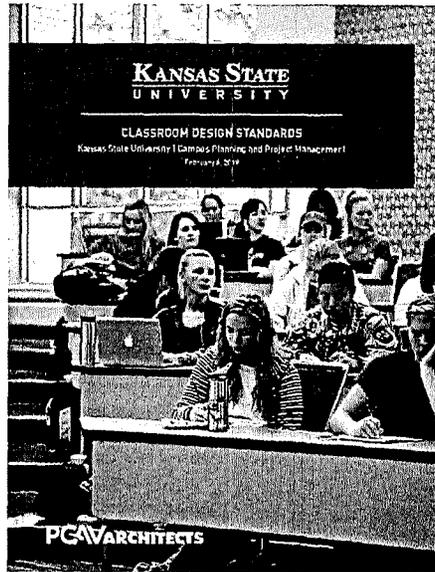
COMPLETION DATE

Summer 2021

CLASSROOM DESIGN STANDARDS

▶ Kansas State University

As part of the firm's on-call programming contract, PGAV was tasked with developing classroom design standards to support K-State's Classroom Planning Committee. The report systematizes strategies for the renovation of centrally scheduled classrooms across campus. To support K-State's classroom renovation effort, the Design Standards will serve as a guide for classroom remodels and addresses common classroom configurations and best practices for classroom design. Classroom design considerations addressed in this document included classroom type and target square footage per occupant, teaching space, and the integration of technology and tools, lighting systems, and universal design principles to accommodate students and instructors with special needs. While these standards were intended to be broadly applicable to a variety of existing conditions, the Design Standards recognize each renovation will be unique and will require professional discretion in determining how best to apply the standards.



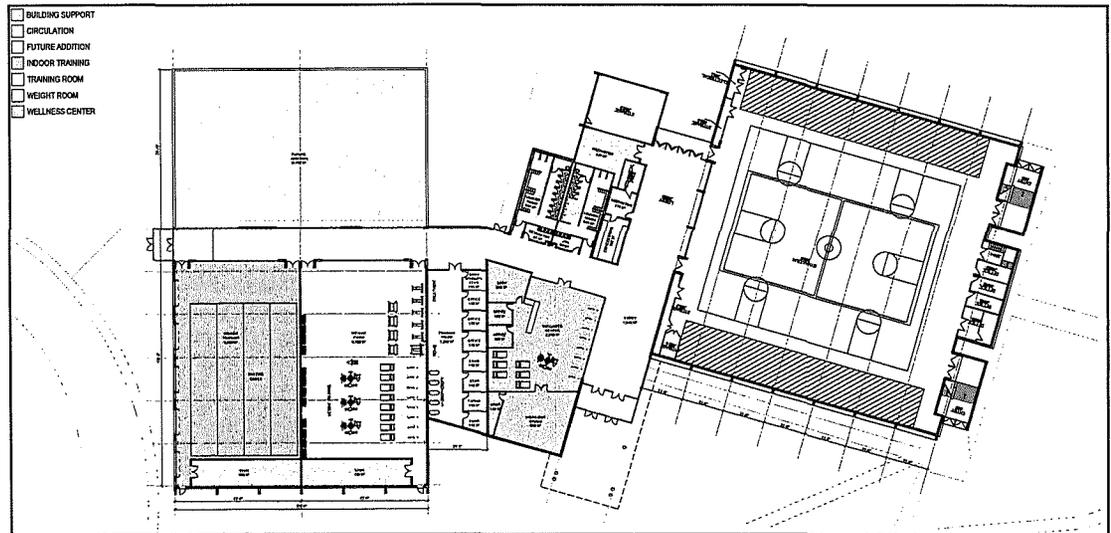
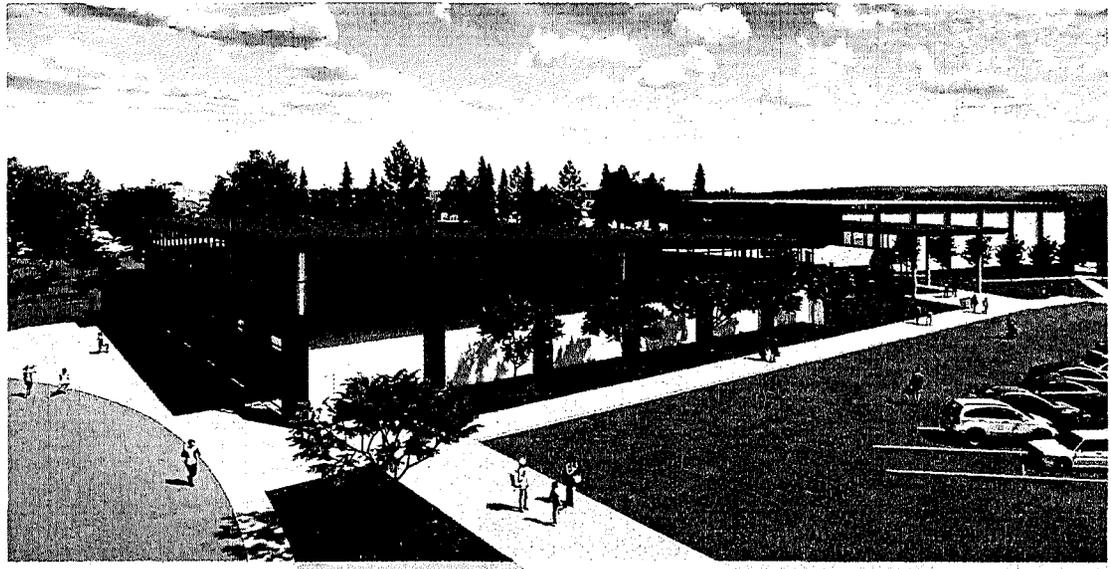
LOCATION	BUILDING SIZE	CONSTRUCTION COST	COMPLETION DATE
Kansas State University Manhattan, Kansas	N/A	N/A	2019

KCKCC INDOOR ATHLETICS FACILITY CONCEPT STUDY

► Kansas City, Kansas

PGAV recently completed a concept study for Kansas City Kansas Community College to support fundraising for a new Indoor Athletics Facility. The proposed plan includes:

- Indoor gymnasium with competition basketball court and bleachers
- Wellness Center featuring cardio equipment and yoga studio
- Weight Room equipped with both free weights and weight machines
- Sports Injury Treatment area with hydrotherapy and rehabilitation
- Indoor Training Room with batting cages
- Fully equipped men’s and women’s locker rooms
- Enclosed equipment storage accessible from both the interior and exterior



LOCATION

Kansas State University
Manhattan, Kansas

BUILDING SIZE

17,700 SF

CONSTRUCTION COST

\$14,000,000 (estimate)

COMPLETION DATE

2020

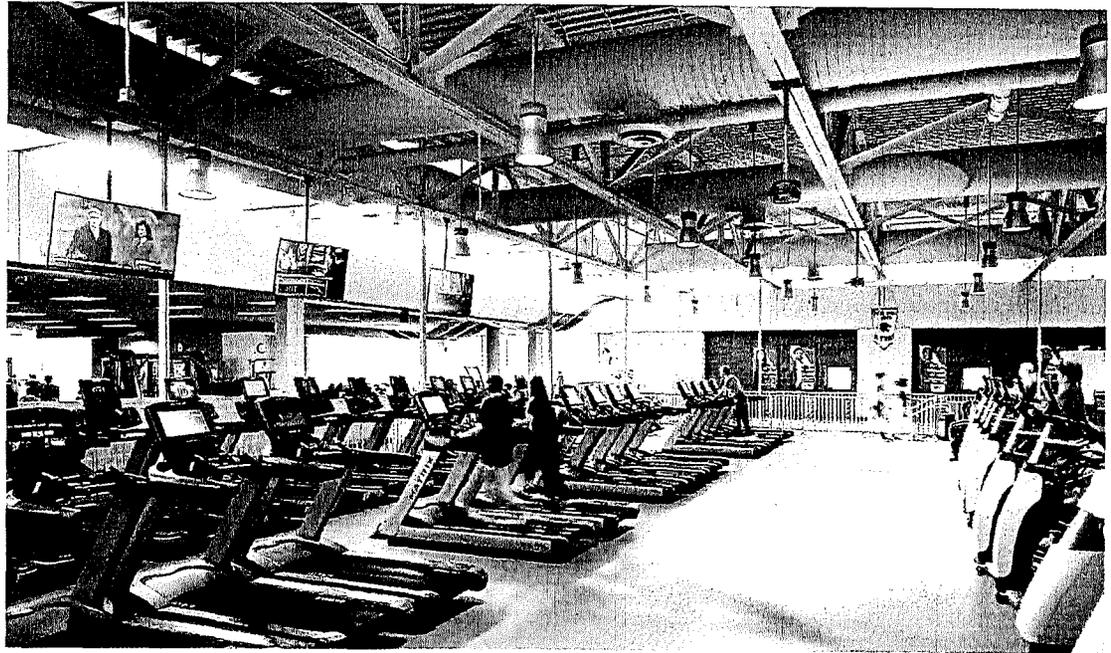
NORTH KANSAS CITY YMCA RENOVATION

▶ North Kansas City, Missouri

Through a partnership with the City of North Kansas City, the YMCA is operating the former North Kansas City Community Center. The partnership allows the YMCA and the City to work together to serve more people and provide more programs to improve the quality of life for people of all ages in our community.

The YMCA with financial support from the City has initiated a capital development plan that resulted in a renovation of the North Kansas City YMCA. The project's scope includes:

- Remodel of Welcome Center space for greater efficiency in member, participant and guest relations
- Remodel of lobby area for future healthy food venue
- Conversion of Gymnasium Court 1 into a two-level amenity to include approximately 3,600 SF of Multipurpose/Group Exercise Studio and an upper level Cardiovascular Equipment Mezzanine of approximately 2,600 SF
- Conversion of an existing 1,900 SF cardiovascular equipment area into a Functional/Personal Training area



LOCATION

University of Arkansas
Fayetteville, Arkansas

PROJECT SIZE

10,400 SF

CONSTRUCTION COST

\$1,900,000

COMPLETION DATE

2018

EPLEY CENTER FOR HEALTH PROFESSIONS MECHANICAL RENOVATION

► University of Arkansas

The Epley Center for Health Professionals facility is home to the Speech and Hearing Clinic and the Eleanor Mann School of Nursing. The building contains clinic, classroom, laboratory, and office spaces. Since a renovation in 2012, the building's heating, ventilation, and air conditioning system has had indoor temperature control and maintenance issues, so the University of Arkansas teamed with Henderson Engineers to discover a solution.

Our team completed a life cycle cost analysis during preliminary design and the decision was made to replace the existing system with new 4-pipe fan coil units with heating water served from new high efficient natural gas boilers & pumping system. Chilled water would be served from the existing campus chilled water utility system with new direct buried chilled water piping brought into the building along with chilled water pumps. The design includes the installation of 81 new fan coil units along with chilled and heated water piping through out the building. The project's main challenge is the fast-tracked installation schedule, starting at the end of the spring semester and wrapping up at the start of the fall semester.



LOCATION

University of Arkansas
Fayetteville, Arkansas

PROJECT SIZE

45,000 SF

CONSTRUCTION COST

\$3,600,000

COMPLETION DATE

Ongoing

PGAARCHITECTS

1900 W. 47th Place, Suite 300
Westwood, KS 66205

913.362.6500
PGAArchitects.com

Architectural and Engineering Basic Services Fee Estimating Guidelines

Basic Services is the design work customary on a typical project to take an established building program, site, and budget, and then develop the architectural design, engineer the building systems, produce construction documents, and perform construction administration for a single phase project. Basic Services include the design services customary on every project such as architectural, structural, civil, mechanical, and electrical engineering services. Basic Services are described in the Standard Consulting Agreement.

The following method estimates the Basic Services fees using the Amount Available for Construction (AAC) from the established project budget. The fees are expressed as percentage of AAC for six (6) projects types with differing levels of complexity for both New Construction and Renovation. The Project Types are:

Project Type I – Considerably Less than Average Complexity: Farm Structures, shop & Maintenance, Service, Warehouses, Storage Facilities, Parking Structures.

Project Type II – Less Than Average Complexity: Student Housing, Office Buildings, Complex Parking Structures.

Project Type III – Average Complexity: Classroom Facilities, General Teaching Spaces, Medical Offices, Clinics, Gymnasias.

Project Type IV – More Than Average Complexity: Complex University Buildings, Engineering Laboratories, University Libraries, Dining Facilities, Theaters, Arenas, Auditoriums, Medical Schools.

Project Type V – Considerably More than Average Complexity: Science and Medical Research Buildings, Hospitals, Museums.

Project Type VI – Engineering Projects: Campus/Building Chilled Water, Steam, Fire Protection, or Hot Water Systems; Campus/Building Electrical Distribution Systems; Building Replacement Mechanical or Electrical Systems; Building or Campus Generator Systems; Campus Fire Alarm or Security Systems; Outdoor Lighting or Sports Lighting; Retrofit Building Fire Protection Systems; Campus Voice/Data Systems. Power & steam generating capacity projects are not included. The fees for projects at Power Plants, projects involving high voltage electrical distribution, projects involving steam distribution over 15 psi or new major chiller plants shall be determined by current market conditions.

To use the chart, find the row corresponding to the project's AAC, then find the column best describing the project type. The intersection of the row and column is the percentage of the AAC that is a reasonable estimate of a Basic Services Fee for that project. Fees are then stated as a Lump Sum Amount. When the project AAC is greater than \$30,000,000, contact UM Facilities Planning & Development.

The application of these tables is dependent on understanding the size and complexity of the project. It is assumed the project scope of work and budget has been developed to a level where this method can be used to produce an estimate of a reasonable and customary fee.

Consultant Fees to prepare Design/Build proposal documents are estimated using the Basic Services curves and then factored for the level of bridging documents required. For example bridging through Design Development would be factored by 35%. Services for proposal package preparation, responding to questions during the proposal phase, proposal evaluation services, and construction administration support are then added as not to exceed fees estimated based of the level of effort anticipated.

Not included in the Basic Services Fee are amounts to cover Additional Services or approved Reimbursable Expenses. These costs should be added to the Total Project Budget and should be estimated based on the projected scope of work.

Additional Services are those required to augment the Basic Services that are not customary on every project. The need for Additional Services is dependent on the individual project and will change from project to project. Some of these services will not be identified until the project is underway. However, it is preferable for needed additional services to be identified when requesting services for design.

Additional Services

Additional Services include, but are not limited to those listed below. It is desirable that these be identified with the basic services fees and approved at the same time.

Pre-Design Phase

- Feasibility Studies/Analysis
- Assistance with Grant and Funding Applications
- Facility Programming
- Master Planning
- Soils Investigations/Reports/Geotechnical Services
- Surveys-Topographic/Boundary/Vegetation Improvements/Utilities
- Existing Facilities Analyses
- Measured Drawings of Existing Facilities
- Environmental Assessments
- Storm Water Management Permitting
- Environmental/Site Permitting
- Traffic Analyses
- Hazardous Materials Consultation/ Surveys

Design Phase

- Additional Project Meetings [in Excess of Biweekly]
- Accelerated Design Schedules
- Engagement of a Signature Design Architect
- Engagement of Specialty Expert Consultants for consultation on design parameters, such as Food Service, Historic Preservation, Theater, Acoustical, Audio/Visual, Landscape, Life Safety, Laboratory, Way-finding graphics, Interior Design, Furnishings, & Artwork
- Coordination with Consultants Engaged Directly by the Owner
- Site Specific Seismic Studies
- LEED Process Support and Documentation
- Electrical Fault Current Studies
- Load Studies (Mechanical or Electrical)
- Reliability Analysis (Mechanical or Electrical)
- Value Analyses / Life Cycle Cost Analyses (beyond that required under basic services)
- Computer Modeled Energy Analyses (other than required by University Energy Standards)
- Renderings/Models/Videos
- Owner directed Changes to Scope, Size, or Complexity
- Documents Prepared for Multiple Component Construction Packages
- Documents Prepared for Separate Proposal Packages Requested by the Owner
- Environmental Work (Hazardous Waste Consultant Hired by Design Professional)

Construction Phase

- Comprehensive CPM Scheduling
- Phased Construction Observation
- Prequalification of Contractors/ Subcontractors Services
- Commissioning
- Commissioning Support
- Full Time Construction Inspection Provided by the Design Professional
- Program Management Services
- Designing Replacement Work for Damaged Work
- Post Occupancy Observations/Evaluations

ARCHITECTURAL & ENGINEERING BASIC SERVICES FEE PERCENTAGE NEGOTIATION GUIDELINES

Amount Available for Construction (\$)	TYPE I Considerably less than average complexity		TYPE II Less than average complexity		TYPE III Average Complexity		TYPE IV More than average complexity		TYPE V Considerably more than average complexity		TYPE VI Engineering Projects	
	New %	Reno. %	New %	Reno. %	New %	Reno. %	New %	Reno. %	New %	Reno. %	New %	Reno. %
500,000	6.4	8.0	7.2	9	8	10	8.8	11	9.6	12	9	11.2
750,000	6.1	7.6	6.8	8.6	7.6	9.5	8.4	10.5	9.1	11.4	8.5	10.6
1,000,000	5.8	7.3	6.6	8.2	7.3	9.1	8	10	8.8	11	8.2	10.2
1,250,000	5.7	7.1	6.4	8	7.1	8.9	7.8	9.8	8.5	10.7	8	10
1,500,000	5.6	7.0	6.3	7.9	7	8.8	7.7	9.7	8.4	10.5	7.9	9.8
1,750,000	5.5	6.9	6.2	7.8	6.9	8.7	7.6	9.5	8.3	10.4	7.8	9.7
2,000,000	5.5	6.9	6.2	7.7	6.9	8.6	7.5	9.4	8.2	10.3	7.7	9.6
2,250,000	5.4	6.8	6.1	7.7	6.8	8.5	7.5	9.4	8.2	10.2	7.6	9.5
2,500,000	5.4	6.7	6.1	7.6	6.7	8.4	7.4	9.3	8.1	10.1	7.5	9.4
2,750,000	5.3	6.7	6	7.5	6.7	8.4	7.3	9.2	8.0	10	7.5	9.4
3,000,000	5.3	6.6	6	7.4	6.6	8.3	7.3	9.1	7.9	9.9	7.4	9.3
3,500,000	5.3	6.6	5.9	7.4	6.6	8.2	7.2	9	7.9	9.9	7.4	9.2
4,000,000	5.2	6.5	5.9	7.4	6.5	8.2	7.2	9	7.8	9.8	7.3	9.2
4,500,000	5.2	6.5	5.9	7.3	6.5	8.1	7.2	8.9	7.8	9.8	7.3	9.1
5,000,000	5.2	6.5	5.8	7.3	6.5	8.1	7.1	8.9	7.8	9.7	7.2	9
6,000,000	5.1	6.4	5.8	7.2	6.4	8	7.1	8.8	7.7	9.6	7.2	9
7,000,000	5.1	6.4	5.7	7.2	6.4	8	7	8.8	7.7	9.6	7.1	8.9
8,000,000	5.1	6.3	5.7	7.1	6.3	7.9	7	8.7	7.6	9.5	7.1	8.9
9,000,000	5.0	6.3	5.7	7.1	6.3	7.9	6.9	8.7	7.6	9.5	7.1	8.8
10,000,000	5.0	6.3	5.6	7	6.3	7.8	6.9	8.6	7.5	9.4	7	8.8
11,000,000	5.0	6.2	5.6	7	6.2	7.8	6.8	8.6	7.5	9.3	7	8.7
12,000,000	4.9	6.2	5.6	7	6.2	7.7	6.8	8.5	7.4	9.3	6.9	8.7
13,000,000	4.9	6.1	5.5	6.9	6.1	7.7	6.8	8.4	7.4	9.2	6.9	8.6
14,000,000	4.9	6.1	5.5	6.9	6.1	7.6	6.7	8.4	7.3	9.2	6.8	8.5
15,000,000	4.8	6.1	5.5	6.8	6.1	7.6	6.7	8.3	7.3	9.1	6.8	8.5
16,000,000	4.8	6.0	5.4	6.8	6	7.5	6.6	8.3	7.2	9	6.7	8.4
17,000,000	4.8	6.0	5.4	6.7	6	7.5	6.6	8.2	7.2	9	6.7	8.4
18,000,000	4.8	5.9	5.3	6.7	5.9	7.4	6.5	8.2	7.1	8.9	6.7	8.3
19,000,000	4.7	5.9	5.3	6.6	5.9	7.4	6.5	8.1	7.1	8.9	6.6	8.3
20,000,000	4.7	5.9	5.3	6.6	5.9	7.3	6.4	8.1	7.0	8.8	6.6	8.2
21,000,000	4.7	5.8	5.2	6.5	5.8	7.3	6.4	8	7.0	8.7	6.5	8.1
22,000,000	4.6	5.8	5.2	6.5	5.8	7.2	6.4	7.9	6.9	8.7	6.5	8.1
23,000,000	4.6	5.7	5.2	6.5	5.7	7.2	6.3	7.9	6.9	8.6	6.4	8
24,000,000	4.6	5.7	5.1	6.4	5.7	7.1	6.3	7.8	6.8	8.6	6.4	8
25,000,000	4.5	5.7	5.1	6.4	5.7	7.1	6.2	7.8	6.8	8.5	6.3	7.9
26,000,000	4.5	5.6	5.1	6.3	5.6	7	6.2	7.7	6.7	8.4	6.3	7.9
27,000,000	4.5	5.6	5	6.3	5.6	7	6.1	7.7	6.7	8.4	6.2	7.8
28,000,000	4.4	5.5	5	6.2	5.5	6.9	6.1	7.6	6.6	8.3	6.2	7.8
29,000,000	4.4	5.5	5	6.2	5.5	6.9	6.1	7.6	6.6	8.3	6.2	7.7
30,000,000	4.4	5.5	4.9	6.1	5.5	6.8	6.0	7.5	6.6	8.2	6.1	7.6