

Henneman Engineering Inc. is a multi-discipline design engineering firm with more than five decades of experience in mechanical, electrical, plumbing, fire protection, and information technology for new and renovated facilities including healthcare, education, commercial, municipal, and industrial design.

We have successfully delivered high quality services on thousands of challenging projects. The attributes, processes, and experience base that differentiate Henneman Engineering from other engineering firms include:

- Engineering specialty from programming through operations and warranty.
- Involvement of Henneman Engineering principals in every aspect of project design and delivery.
- Proven record of developing accurate budgets and delivering a quality project within budget.
- Committed to keeping the same team on the project throughout its duration.

Professional Practice Since 1961 | www.henneman.com | 608.833.7000 Madison | 262.901.0626 Waukesha

Henneman Engineering offers comprehensive engineering design services from master planning through construction administration, as well as commissioning and retrocommissioning.

Specific systems and components designed by Henneman Engineering include, but are not limited to:

Mechanical Engineering

- Clean Room and Lab Environment
- HVAC Systems
- Ventilation/IAQ/Infection Control
- Environmental Control Systems
- Chilled Water Systems
- Refrigeration Systems
- Ammonia Systems
- CFC Coolants
- Plumbing and Fire Protection
- Medical Gas Systems
- Special Gas Systems Utility Piping
- Boiler Systems and Power Plant Design
- Steam Distribution Systems
- Compressed Air Systems
- High Temperature and Pressure Systems

Electrical Engineering

- Building Power Systems
- Secondary Power Distributions
- Emergency Power Systems
- Communications Data Systems
- Fire Protection Systems
- Energy Management Systems
- Control/Instrumentation
- Lighting Design
- Power Studies and Primary Power Design
- Substations and Distribution
- Security
- Nurse Call
- Lighting Control Systems
- Building Code Review Studies
- Emergency and Stand-by Power Systems

Commissioning

Retrocommissioning

Energy Services

Procurement

Project/Construction Management

Long Range Planning

Environmental Monitoring

Economic Feasibility Analysis

Value Analysis

Information Technology

- Structured Cabling
- Audio Visual
- Access Control
- Video Surveillance
- Paging Designs

Site Development

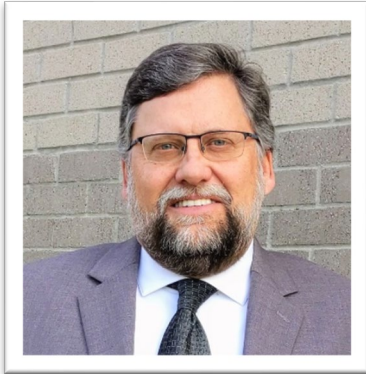
Emergency Preparedness

Industrial Services

Life-Cycle Cost Analysis

SCOTT SAUNDERS, PE,
LEED® AP

Principal



Education

Bachelor of Science,
Mechanical Engineering
University of Wisconsin-
Madison

Licenses & Certifications

Registered Professional
Engineer: Wisconsin, 20 other
states

Leadership in Energy and
Environmental Design
Accredited Professional in
Building Design and
Construction, US Green Building
Council

Healthcare Construction
Certificate, American Society for
Healthcare Engineering

Evidence-Based Design
Accreditation and Certification,
The Center for Health Design

Career History

2019-Present	Henneman
1977-2018	Other Firms

Scott is a highly qualified mechanical engineer with over 30 years of experience in healthcare, design-build, strategic planning, and management. In addition, he has been an instructor and guest lecturer at the University of Wisconsin.

Lead Senior Engineer Role

As the Lead Senior Engineer Scott works directly with our project managers and department heads to maintain existing processes and evolve our project delivery to improve quality and efficiency. On Division of Facilities Development & Management projects Scott will be involved as a lead senior engineer, providing schematic design guidance and quality reviews, verifying system constructability, and managing projects.

Career Highlights

- Winner of the Design-Build Institute of America (DBIA) National Distinguished Leadership Award. Served on national committees including Sustainability and Innovation
- Led companywide transition to full utilization of Building Information Modeling (BIM) and Virtual Design and Construction (VDC) technologies leading to an overall 10% savings in construction costs
- Provided strategic direction and support through three major ownership changes including transitions from family owned to private equity ownership, to publicly traded on the NYSE, and back to private ownership four years later
- Pioneered and integrated sustainable practices into the design-build process and took leadership role in educating over 100 internal professional staff leading to the LEED accreditation of over 35 professionals in under six months

Professional Experience

- Directed the design and engineering of more than 1,000 healthcare projects throughout the country
- Engaged in creation and implementation of corporate business plans and initiatives
- Provided companywide leadership for process improvement, business development, and financial results
- Led effort to develop processes and tools that provided exciting new approaches to Integrated Project Delivery and Virtual Design and Construction
- Managed and provided oversight to all Architectural and Engineering departments, including Structural, Mechanical, Electrical, Civil, Architectural Design, Interior Design, and Site Design
- Led strategic vision, planning, and training, to position the firm for growing market demand for sustainable buildings
- Directed and supervised Corporate Scheduling and Estimating departments

Recent projects:

University of Wisconsin-Madison, Parking Lot 83 Exhaust System Upgrade, Madison, Wisconsin

Parkland College, Door Security Systems Design, Champaign, Illinois

South Suburban College, Allied Health Facility, South Holland, Illinois

Temple Beth El, HVAC System Upgrades, Madison, Wisconsin

Tomah Health and Wellness Campus, Replacement Hospital, Tomah, Wisconsin

UW Health, MBAEI General Services, Various Locations

University of Wisconsin-Madison, Parking Lot 83 Exhaust System Upgrade, Madison, Wisconsin

BRAD BIDDICK, RD

Electrical Designer



Education

Associate Degree in Applied
Science, Architectural
Technology

Madison Area Technical College

Licenses & Certifications

State of Wisconsin Registered
Designer of Engineering
Systems – Electrical

Career History

2011-Present	Henneman
1998-2011	Other Firms

Brad is an electrical designer with over 20 years of engineering experience. Brad has a passion for lighting design and he brings a wealth of experience and talent to innovative and energy efficient lighting strategies. He has extensive experience with commercial, mixed-use, government, healthcare and research facilities.

Carroll University, New Science Building, Waukesha, Wisconsin

Fox Valley Technical College, Retrocommissioning, Appleton, Wisconsin

Iowa State University, Troxel Auditorium, Ames, Iowa

Lawrence University, Colman Residence Hall Renovation, Appleton, Wisconsin

Madison College, Watertown Campus Generator, Watertown, Wisconsin

Madison College, Madison, Wisconsin

- Academic Advancement Office Renovations
- Culinary School
- Emergency Power Study
- Goodman South Campus Audiovisual Design
- Penske Daycare Conversion
- Truax Data Center Fire Protection System Replacement
- Truax Site Security Camera Design

Madison College, Emergency Vehicle Operation and Control (EVOC) Facility, Columbus, Wisconsin

Madison College Fort Atkinson, Nursing Lab Renovations, Fort Atkinson, Wisconsin

Madison College Portage, Campus Renovations, Portage, Wisconsin

Madison College Regionals, WebEx Upgrades, Multiple Locations

Madison Public Library, Meadowood Branch Library & Neighborhood Center, Madison, Wisconsin

Medical College of Wisconsin, Milwaukee, Wisconsin

- Active Learning Classrooms
- Human Anatomy Building

University of Wisconsin–La Crosse, Wittich Hall Renovation, La Crosse, Wisconsin

University of Wisconsin–Madison, Madison, Wisconsin

- Bascom Hall & Van Vleck Hall Classroom Renovations
- Educational Sciences Building Interior Renovation
- Engineering Hall Plaza/Entrance Renovation
- Humanities Building Mills Concert Hall Lighting Design
- Library Master Plan
- Memorial Union Phase II Alumni Hall
- Pyle Center Conference Room Renovations
- Southeastern Recreational Facility Commissioning
- Wendt Commons Maker Space

University of Wisconsin–Milwaukee, School of Freshwater Sciences, Milwaukee, Wisconsin

University of Wisconsin–Platteville, Platteville, Wisconsin

- Dobson and Melcher Halls Residence Halls Renovations
- Russell Hall Mechatronics Lab Renovations

University of Wisconsin-Stevens Point, Science Building Instructional Space Renovation, Stevens Point, Wisconsin

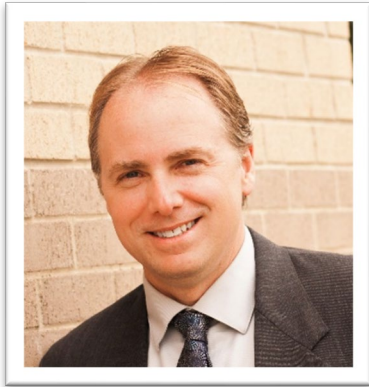
University of Wisconsin–Stout, Harvey Hall, Menominee, Wisconsin

University of Wisconsin-Whitewater, Whitewater, Wisconsin

- Drumlin Dining Hall Remodeling
- Service Lot 12 Solar Array Pre-Design

Waukesha County Technical College, Workforce Development Center Renovations, Building W, Pewaukee, Wisconsin

MICHAEL WIMMER, PE
Mechanical Engineer



Education

Bachelor of Science, Mechanical Engineering

University of Wisconsin-Madison

Licenses & Certifications

Registered Professional Engineer: Wisconsin

Career History

1999 – Present	Henneman
1994 – 1999	Other Firms

Mike is a skillful mechanical engineer with over 25 years of professional experience primarily in higher education and healthcare projects. A trustworthy project manager on many veteran and educational facilities, Mike lends his expertise in designing top-notch mechanical and HVAC systems for a variety of building types.

Carroll University, New Science Building, Waukesha, Wisconsin

Lawrence University, Colman Residence Hall Renovation, Appleton, Wisconsin

University of Wisconsin-La Crosse, Wittich Hall Renovation, La Crosse, Wisconsin

University of Wisconsin-Madison, Madison, Wisconsin

- Bascom Hall & Van Vleck Hall Classroom Renovations
- Classroom Renovation IT Improvements, Ingraham Hall, Sterling Hall, Educational Sciences
- Classroom IT Improvements, Russell Labs, Van Hise Hall
- Educational Sciences 4th Floor Testing Labs Renovation
- Educational Sciences Building Interior Renovation
- Engineering Hall Plaza/Entrance Renovation
- Ingraham Hall Classroom Renovations
- Integrated Dairy Phase III
- Multi-Building Elevator Renovation
- Parking Lot 83 Exhaust System Upgrade
- Plant Sciences Renovation
- Rennebohm Hall Chemical Storage Renovation
- Rennebohm Hall Pharmacy Building Second Floor Remodel
- School of Medicine and Public Health L3/1 Rodent Containment and Quarantine
- Southeast Recreational Facility (SERF) Replacement Commissioning
- Steam Tunnel Sump Pump
- Wendt Commons Maker Space
- Witte Residence Hall Renovation Commissioning
- Women's Hockey Locker Room

University of Wisconsin-Milwaukee, Downer Buildings HVAC & Historic Renovations, Milwaukee, Wisconsin

University of Wisconsin-Platteville, Platteville, Wisconsin

- Dobson & Melcher Residence Halls Renovations
- Pickard Hall Apartment Renovation
- Russell Hall Mechatronics Lab Renovations
- Williams Fieldhouse Addition

University of Wisconsin-Stevens Point, Stevens Point, Wisconsin

- Allen Center
- Classroom Remodeling
- Health Enhancement Center – HVAC Improvements
- Visiting Team Locker Room

University of Wisconsin-Oshkosh, Steam and Condensate Replacement, Oshkosh, Wisconsin

University of Wisconsin-Superior, Ross and Hawkes Residence Hall Renovation, Superior, Wisconsin

Previous Individual Experience (partial)

University of Wisconsin, Madison, Wisconsin

- Bardeen Hall
- Department of Anatomy

SCOTT KADING, QCxP

**Director of Commissioning
Commissioning Provider**



Education

Bachelor of Science, Mechanical Engineering, University of Wisconsin – Platteville

Bachelor of Science, Business Administration, University of Wisconsin – Platteville

Certifications

Qualified Commissioning Professional (QCxP) University of Wisconsin-Madison, College of Engineering

Career History

2017 – Present	Henneman
1980 – 2017	Other Firms

Scott is a mechanical engineer with extensive experience providing commissioning services including documentation review, field visits and operational verification of major electrical, HVAC and plumbing systems. He has managed MEP system and building envelope commissioning services and LEED reporting and submittal reviews for new construction and retro-commissioning. Additionally, Scott has participated in commissioning standards workgroups developing national standards for project documentation.

Fox Valley Technical College, Retrocommissioning, Appleton, Wisconsin

Lincoln’s Challenge Secure Training Academy, Commissioning, Rantoul, Illinois

University of Wisconsin School of Medicine and Public Health, K4/4 Mechanical Commissioning Services, Madison, Wisconsin

University of Wisconsin–Eau Claire, New Residence Hall Commissioning, Eau Claire, Wisconsin

University of Wisconsin-La Crosse, Wittich Hall Renovation, La Crosse, Wisconsin

University of Wisconsin-Madison, Madison, Wisconsin

- Hamel Performance Center Commissioning
- Memorial Union Renovation Phase II Commissioning
- Sellery Residence Hall Renovation Commissioning
- Southeastern Recreational Facility Commissioning
- Wendt Commons Maker Space
- Witte Residence Hall Renovation Commissioning

Wisconsin Institutes for Medical Research, West Wedge Addition Commissioning, Madison, Wisconsin

Previous Experience

Orleans Parish School System/Recovery School District, New Orleans, Louisiana

- Commissioning services at 52 schools over an 8-year period for the combined New Orleans school system. Envelope Commissioning was performed in addition to the services provided to the Chicago public school system.

University of Chicago, Commissioning Services, Chicago, Illinois

- Searle Laboratory (includes IME Expansion and Clean Room)
- New Residence Hall
- Laboratory Teaching School (includes Early Child Care Campus)
- Jones Hall Renovations

University of Wisconsin-Madison, Madison, Wisconsin

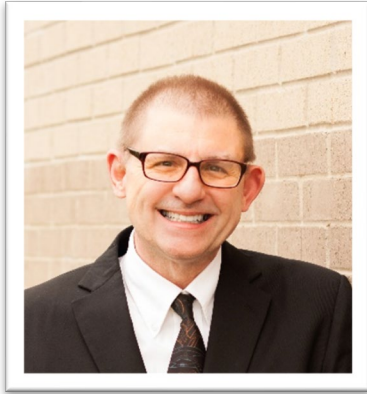
- School of Human Ecology (SoHE), Madison Wisconsin
- Student Athlete Performance Center, Madison, Wisconsin

University of Wisconsin-Milwaukee, Northwest Quadrant Children’s Center, Milwaukee, Wisconsin

Chicago Public School System, Chicago, Illinois

Commissioning on twenty-three schools included project documentation, design reviews, site visits, project management, QA/QC management for LEED, construction verification checklists and conducting functional testing of MEP systems.

TOM BREU, PE
Mechanical Engineer
Fire Protection Engineer
Plumbing Engineer



Education

Bachelor of Science, Mechanical Engineering

University of Wisconsin-Madison

Bachelor of Business Administration

University of Wisconsin-Stevens Point

Licenses & Certifications

Professional Engineer: Wisconsin

Career History

2016-Present	Henneman
1995-2016	Other Firms

Tom is a mechanical engineer with over 25 years of experience, specializing in plumbing and fire protection design, with an emphasis on healthcare and municipal facilities. Tom has served on the Wisconsin Code Plumbing Advisory Committee, has been a contributing author to the Plumbing Engineering Design Handbook and has been a Technical Editor for Plumbing Systems and Design magazine.

Madison College, Madison, Wisconsin

- Academic Advancement Office Renovations
- Bookstore Renovations
- Diesel Lab Renovations
- Facilities Master Plan
- Foundation Centre Office Renovations
- Goodman South Campus
- Penske Daycare Conversion
- Truax Data Center Fire Protection System Replacement
- Truax Data Center Relocation

Rockford Central Library, Interim Site, Rockford, Illinois

University of Wisconsin-Eau Claire, Towers Hall Renovation, Eau Claire, Wisconsin

University of Wisconsin-La Crosse, Wittich Hall Renovation, La Crosse, Wisconsin

University of Wisconsin-Madison, Madison, Wisconsin

- Bascom Hall & Van Vleck Hall Classroom Renovations
- Classroom Renovation IT Improvements Russell Labs, Van Hise Hall
- Cole Hall & Phillips Hall Fire Alarm, Sprinkler System, Restroom Renovations
- Educational Sciences 4th Floor Testing Labs Renovation
- Educational Sciences Building Interior Renovation
- Engineering Hall Plaza/Entrance Renovation
- Pyle Center Conference Room Renovations
- Resident Rooms Conversion, Phillips Hall
- Wendt Commons Maker Space

University of Wisconsin-Oshkosh, Fletcher Hall Renovation, Oshkosh, Wisconsin

University of Wisconsin-Platteville, Platteville, Wisconsin

- Pickard Hall Apartment Renovation
- Russell Hall Mechatronics Lab Renovations
- Williams Fieldhouse Addition

University of Wisconsin-Whitewater, New Residence Hall, Whitewater, Wisconsin

Waukesha County Technical College, Building C – HUB and SGA Kitchen Renovations, Waukesha, Wisconsin

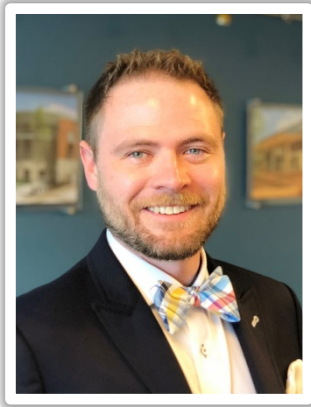
Previous Individual Experience (partial)

Ripon Library, Ripon, Wisconsin

Wisconsin Lutheran College, Milwaukee, Wisconsin

Lynde and Harry Bradley Technology and Trade School, Milwaukee, Wisconsin

**AARON N. SMAK, RCDD,
PMP, M.B.A., CISSP, DE**
Lead Technology Consultant



Education

ITT Technical Institute, AAS
Computer
Networking 2008

ITT Technical Institute, AAS
Drafting and Designing 2006

ITT Technical Institute, BS
Information Systems Security
2009

Ottawa University, MBA 2011

Accreditations

Designer of Electrical Systems (DE)
– Wisconsin Permit #2349

Certified Information Systems
Security Professional (CISSP) 2019

Registered Communications
Distribution Designer (RCDD)
2009

Comp TIA Network+

CompTIA Security+

Project Management Professional
(PMP) 2009

Affiliations

(ISC)2: The World's Leading
Cybersecurity and IT Security
Professional Organization

Building Industry Consulting
Service International

Project Management Institute,
Madison, Wisconsin

Career History

2020-Present	Henneman
2004-2020	Other Firms

Aaron joins the Henneman team with more than 16 years of experience in systems design and execution, from beginning concepts to end-user satisfaction. His expertise in low voltage system designs including structured cabling, security surveillance and access control, wide-band video distribution, and audio/visual systems is extensive. With cutting-edge certifications and training, he covers every technical challenge in total system design, ensuring clients are well trained in equipment use and their audio and visual experience delivers above and beyond expectations. Aaron continues to provide trusted, quality design and specifications for clients of higher education, K-12, healthcare, government, industrial, commercial and military facilities.

Wisconsin Department of Military Affairs, National Guard Readiness Center Replacement, Viroqua, Wisconsin

VA Union Grove, VoIP Upgrades: Boland, Gates, Fairchild, Mauer and Shemanske Halls, Union Grove, Wisconsin

South Suburban College, Allied Health Facility, South Holland, Illinois

Previous project experience:

University of Wisconsin–Eau Claire, Eau Claire, Wisconsin

- Towers Residence Hall Renovation Study
- Governors Residence Hall, Renovation and Addition

University of Wisconsin–La Crosse, La Crosse, Wisconsin

- Utility improvement project (Fiber Optic Backbone Upgrade – Entire Campus)
- Eagle Recreation Center Addition

University of Wisconsin–Madison, Madison, Wisconsin

- Southeast Recreational Facility (SERF)
- Sellery Residence Hall
- Memorial Union Renovation Phase 1
- Memorial Union Renovation Phase 2
- Witte Residence Hall Renovation Addition
- Dejope Hall
- La Bahn Arena Addition
- Union South
- Wisconsin Alumni Research Foundation (WARF), Second and Third Floor Renovations with FP&M
- Health Services Renovation
- Office Renovations
- 21st Century Phase 3
- Camp Randall North Addition

University of Wisconsin–Milwaukee, Milwaukee, Wisconsin

- Sandburg Residence Hall Renovation
- West Tower Remodel

University of Wisconsin–Parkside, Wyllie Hall Renovation, Kenosha, Wisconsin

University of Wisconsin–Stout, North Hall Residence Hall Addition and Renovation, Menomonie, Wisconsin

University of Wisconsin–Whitewater, Whitewater, Wisconsin

- New Residence Hall
- Printmaking Lab Renovation
- Utility improvement project (Fiber Optic Backbone Upgrade – Entire Campus)

Marquette University, Marquette Health and Wellness Part 2, Madison, WI

Blackhawk Technical College, Advanced Manufacturing Program Building Renovation, Janesville and Milton, Wisconsin



CENTENNIAL HALL is a four-story building housing the Departments of the College of Education and Human Sciences in one location, replacing obsolete space in Brewer Hall and the Campus school. To allow for this consolidation and upgrade, a new 15 kV service was extended from the campus utility to the new facility via 500 LF of new duct bank installed for this project. The project included pad mounted switch gear, a substation transformer, electrical equipment, a new 250kW generator and associate transfer switches. In addition, the campus valued sustainability.

HENNEMAN ENGINEERING provided mechanical, electrical, and information technology design services. Additionally, Henneman Engineering provided LEED enhanced commissioning (Level 2).

FACILITY IMPROVEMENTS

- 22 general assignment classrooms
- Updated faculty office
- Increased ventilation rates meeting and exceeding current code

ENERGY EFFICIENT SYSTEMS

- Energy recovery wheels in air handling units
- Demand control ventilation
- LED lighting
- Daylight harvesting

LOWER OPERATING COSTS

- Optimized demand control ventilation
- Developed custom settings for lighting controls
- Variable make-up for kitchen exhaust systems

\$44.5M project value

182,000 GSF new construction

NOVEMBER 2013 completion



Henneman Engineering Inc.

Memorial Union Redevelopment (Phase I) Commissioning

University of Wisconsin

Madison, Wisconsin



The 230,700 square foot University of Wisconsin Memorial Union was constructed in 1928 and is the beacon for the University of Wisconsin. The Memorial Union welcomes over five million people a year and houses over 21,000 meetings and functions each year. In the past 75 years, this facility has seen numerous piecemeal renovations and systems, and their functionality are degrading.

In 2006, the Student Union voted to renovate the Memorial Union to update and preserve this campus monument. This effort included:

- Reconstruction/historical renovation of theatre and lobby
- Play Circle
- Hoofers Club
- Craftshop
- Terrace
- Game room
- 2,500 square foot student lounge

This effort also replaces all mechanical, electrical, and plumbing systems serving the building to meeting current code. Outdated systems were replaced, including an expanded below-grade mechanical room.

Henneman Engineering provided custom commissioning services to meet this unique project's needs. Our team of specialists provided system design reviews, submittal reviews, regular commissioning meetings, regular site visits, tracking of construction checklists, verification of functional performance tests, witnessing of facilities training, warranty review and a lessons learned meeting.

Construction Budget: \$55,200,000
Completion Date: 2014



THE SCHOOL OF FRESHWATER SCIENCES is a 4-story, 125,000 GSF addition to the existing Great Lakes Research Facility and was the initial phase of an integrated marine, freshwater, and atmospheric research laboratory. Described as the most complex engineered system in State facility history, this design includes precisely controlled water tempering systems of life support systems for freshwater fish. These systems utilize heat recovery chillers and numerous heat exchanger systems for life support and facility hydronic systems. Shared research support core facilities were created for computation and visualization, genomics, biosecurity (biosecurity levels 2 and 3), and trace analysis. The project included research labs, research core facilities, instructional space, collaboration and office space.

HENNEMAN ENGINEERING provided mechanical, electrical, and information technology design services.

FACILITY IMPROVEMENTS

- Modernized life support controls and research space
- Updated building envelope elements for improved aesthetics
- Replaced most mechanical systems
- Heat recovery system to utilize rejected heat

ENERGY EFFICIENT SYSTEMS

- Retro-fit of LED lighting
- Heat recovery chillers for life support and facility tempering

LOWER OPERATING COSTS

- Energy recovery units for improved ventilation control
- Chilled beam design to reduce airflow required for cooling
- Designed for future department growth and upcoming research opportunities



Henneman Engineering Inc.

Ross and Hawkes Residence Halls Renovation

University of Wisconsin-Superior
Superior, Wisconsin



The Ross and Hawkes Residence Halls project consisted of renovating two existing four-story residence halls. The two residence halls, almost identical in design, each total 61,000 gross square feet, including basements. The reconfigured halls provide two staff apartments, 96 suite-style spaces, 80 single rooms, and 264 double rooms. The residence halls will house a total of 440 students. An 8,400 GSF connecting link will be constructed between the buildings to provide a new central common area that serves both buildings.

Each floor of both buildings included newly remodeled central bathrooms with enhanced privacy features, a centralized laundry space with an adjacent, visually connected study room, centralized kitchen and student lounge.

A new central stair was constructed in each building to provide access to the central connecting link. In addition, a new ADA compliant elevator was installed along with an automatic sprinkler and fire protection system. The existing parking was reconstructed and expanded to provide 351 parking spaces.

The mechanical, electrical, plumbing, telecommunications systems, data, and lighting systems were all upgraded. Henneman Engineering, Inc. also provided structural engineering and commissioning services.

Total Construction Budget: \$29,500,000

Completion Date: 2013



Henneman Engineering Inc.

Grainger School of Business – Learning Commons Study

University of Wisconsin - Madison

Madison, Wisconsin



Henneman Engineering provided mechanical, electrical, plumbing, fire protection and information technology consulting design services for the development of a comprehensive study of the Learning Commons in the Grainger Hall School of Business. The resulting report summarized the planning and design efforts for the 34,700 SF renovation project that is to be located on parts of the first, second, and third floors of Grainger Hall.

The forthcoming Learning Commons Project is listed as a Strategic Priority for the Wisconsin School of Business (WSB). As with most higher education projects, a major challenge for the project is phasing the project to cause the least disruption to the academic school year.

The intent of the project is to provide amenities currently lacking in the WSB. The desired amenities include:

- A vibrant, inspiring, updated space for use by students
- A technology-rich computer lab for analysis and understanding of financial markets
- Spatial improvements to classrooms for active learning
- Modernizing the Business Library
- The creation of a casual, open, larger space for discussion and presentations
- Implementation of sustainable features

Henneman studied how the existing MEP systems would be impacted by the proposed design and facility changes and provided systems design recommendations for alterations, upgrades, and new installations to accommodate the architects facility design recommendations.

Total Construction Budget: NA

Completion Date: 2016



Henneman Engineering Inc.

Harvey Hall Renovation

University of Wisconsin - Stout
Menomonie, Wisconsin



Harvey Hall, the second oldest building on campus, is listed on the National Register of Historic Places as a contributing building in the Menomonie Downtown Historic District. With four stories, plus a basement, the 101,200 square foot building is one of the most heavily used academic and office buildings on campus. Four academic departments and four service offices are housed in Harvey Hall.

This project included replacing and upgrading all mechanical, electrical, telecommunications and life safety systems, and improving ADA accessibility. Most of the building also had new HVAC systems installed. A secondary electrical distribution system was also added.

Other upgrades included a new roof, restrooms, automatic sprinkler system, existing elevator upgrade, and the addition of a second elevator. Classrooms and offices were reconfigured and improved to meet current needs and technology demands.

The existing classrooms are undersized and had ventilation, lighting and lack of technology issues. The renovation returned these classrooms to full instructional functionality.

Henneman Engineering provided mechanical, electrical, information technology including communications, and acoustics design engineering services.

Total Construction Budget: \$20,000,000

Completion Date: 2014



Henneman Engineering Inc.

Aldo Leopold Lakeshore Residence Hall, Phase II – LEED Gold

University of Wisconsin

Madison, Wisconsin



Aldo Leopold was selected as the name for this hall because of the building's focus on sustainability and conservation. The building was designed to increase resident awareness about thinking, working and living in more sustainable ways, principles of Aldo Leopold's career. This LEED Gold Certified project was designed and constructed the second phase of the Lakeshore Residence Hall and Food Service Development project. Energy efficient construction, solar panels to assist with hot water heating, and monitors for electricity and water consumption throughout the building. The scope included a new residence hall that consists of 176 beds totaling 64,400GSF and the renovation of 10,460 GSF of Holt Commons.

Residence Hall:

The new Residence Hall contains freshman and sophomore dwelling units, clustered around bathroom and shower spaces. The units and living areas are arranged as 'houses' comprised of up to 48 students plus one house fellow. Individual residence units are double-occupant bedrooms with a closet. There is one apartment in for the Residence Life Coordinator. The resident floors include kitchenettes, resident lounges and study areas. The building also offers an on-site classroom, laundry, staff offices and a workshop for students. The workshop includes workbenches, tools, bicycle maintenance equipment, crafting supplies, a resource library, and storage for gardening and kitchen tools.

Holt Commons:

The remodeling of Holt Commons, a 10,460 ASF food service facility, serves the area of the Lakeshore Residence Halls. After the completion of Lakeshore Phase I Residence Hall, the food production moved out of Holt Commons which allowed for repurposing the "front desk" for and other residence halls in the immediate area. The three main entrances to Holt Commons were updated and a new roof was installed. Interior portions were remodeled for program space and banquets. An elevator was added along with air circulation improvements.

Henneman Engineering, Inc. provided plumbing and fire protection design engineering services for this project, including a solar domestic water heating system.

LEED Certification: Gold

Total Construction Budget: \$17,300,000

Completion Date: 2014



Henneman Engineering Inc.

Fletcher Hall Renovation

University of Wisconsin

Oshkosh, Wisconsin



This project consisted of the remodel and renovation of Fletcher Hall, including a 4-story building plus basement space, 520 beds and a modified 'H' shape student residence hall.

The original building was constructed in 1964. Since then, the building has received routine maintenance but had not had comprehensive upgrades since original construction which resulted in the mechanical, electrical and plumbing infrastructure functioning beyond its useful life.

Mechanical, electrical, plumbing and telecommunications infrastructure were all completely replaced. The existing steam heating system with a four-pipe hot water/chilled water system was also replaced. An automatic sprinkler system was added to the building along with the addition of an elevator. Hazardous materials were abated and finishes were updated.

Henneman Engineering provided plumbing and fire protection design engineering services.

Total Construction Budget: \$13,400,000

Completion Date: 2017



Henneman Engineering Inc.

Residence Hall Renovations, Phase I Dobson and Melcher Halls

University of Wisconsin

Platteville, Wisconsin



This project consisted of the renovation of Dobson (330-beds, 64,500 GSF) and Melcher Residence Halls (265-beds, 54,500 GSF) on the University of Wisconsin, Platteville campus. Renovated areas include: resident rooms, common space, and residence hall director apartment. Upgrades to the resident rooms included room lighting upgrades, updates to all closet side panels, and replacement of resident room and lower level wood doors with new wood doors and hardware. Energy efficient and sustainable features were incorporated into the design. Solar domestic hot water systems were evaluated.

Existing electrical, telephone, television and data connections were upgraded. Additional wireless access points were installed. Infrastructure for security cameras and card access was installed. A fire sprinkler system was installed throughout both buildings. The fire alarm system was upgraded to interconnect with the new sprinkler system. The emergency lighting and power circuits were connected to an existing electrical generator.

The entire heating system was replaced in both buildings and a new ventilation system was provided for the basement of Melcher and common areas of Dobson Hall. The existing hot water risers were tested and found to be suitable for reuse, saving the project significant costs. Due to very low ceiling heights, a creative solution was devised that incorporated these new services in the ceiling of the corridor in only 6" of space, that was fully integrated with all disciplines.

Henneman Engineering, Inc. provided all mechanical, electrical, plumbing, fire protection, information technology, and commissioning design engineering services.

Total Construction Budget: \$11,000,000

Completion Date: 2016



Henneman Engineering Inc.

Williams Fieldhouse

University of Wisconsin-Platteville, Wisconsin



Williams Fieldhouse Addition

The 49,600 square foot addition is being constructed to address overall campus space deficits related to wellness, fitness, and recreation. The new addition is intended to support student club sports, intramural sports, open recreation, varsity sports, and the Physical Education Department.

The addition includes four multi-purpose playing courts and related support spaces, including lockers and other storage, showers, and restrooms; Wellness Center areas and equipment including cardiovascular, weight machines, free weights, and an exercise studio. Spaces also include an athletic training site and administrative offices.

Henneman Engineering is responsible for mechanical, electrical, plumbing, fire protection, and information technology design.

Estimated Construction Budget: \$6,000,000 Completion Date: 2017





Henneman Engineering Inc.

Downer Buildings HVAC Improvements

University of Wisconsin
Milwaukee, Wisconsin



Henneman Engineering provided the complete mechanical, electrical, plumbing, fire protection and structural design engineering services for the Downer Buildings on the University of Wisconsin, Milwaukee campus.

The Downer Buildings consist of Holton Hall, Merrill Hall, Johnston Hall and Greene Hall on the University of Milwaukee campus. The buildings were originally constructed the late 1890's as part of Milwaukee-Downer College.

Henneman Engineering was commissioned to design the Downer Buildings HVAC Improvements Project in 2009 to improve the buildings cooling and ventilation systems while maintaining the historic nature of the buildings. The remodeling of the buildings was completed in phases to allow the University opportunity to continue utilizing some of the buildings while others are being renovated.

The buildings consist of masonry exteriors with wood frame construction and limited floor-to-floor heights. This created challenges for routing large cooling ducts through the buildings.

Chilled beams were selected for use in the majority of the spaces in the buildings to provide cooling and ventilation for those spaces. The chilled beams utilize primary air from a central air handling unit to induce additional airflow across a cooling coil in the chilled beam. Chilled water was piped to the chilled beam cooling coil to cover the majority of the cooling loads in the spaces. This allows the use of smaller ductwork throughout the building since the ductwork is being utilized for the ventilation air requirements only.

Chilled water was extended to the buildings from the campus chilled water distribution system, allowing the removal of numerous air cooled units located on grade around the buildings as well as numerous window air conditioning units.

A ventilation air handling unit was installed in Holton Hall to provide ventilation and primary air to the classroom and office spaces in Holton Hall through chilled beams. A small variable volume air handling unit was installed to serve areas of the first floor of Holton Hall to respect the original finishes. Cooling and ventilation air for these areas were supplied through floor grilles along the perimeter.

A ventilation air handling unit was installed in Merrill Hall to provide ventilation and primary air to the classroom and office spaces in Merrill Hall and Johnston Hall through chilled beams.

A single zone air handling unit was being installed in Greene Hall to serve the Multi-Function room in Greene Hall.

Construction Cost: \$5,700,000
Completed: 2015



Henneman Engineering Inc.

Drumlin Dining Hall

University of Wisconsin

Whitewater, Wisconsin



This project remodeled Drumlin Dining Hall, which serves student residents on the west side of the University of Wisconsin-Whitewater campus. The dining area was converted from a food court style serving area into an all-you-can-eat style dining facility.

The existing kitchen and seating area were renovated allowing for a more modernized and functional look. The second floor balcony was restored and the building was brought up to ADA accessibility codes, allowing full access to the balcony.

The project added a sprinkler system and made significant plumbing, lighting, power, and data improvements. It also upgraded all HVAC systems, as the existing HVAC systems were inefficient and no longer adequately served the existing building.

Total Construction Budget: \$4,300,000

33,407 SF

Completion Date: 2013