



Dan Bischoff, PE | LEED® AP BD+C

Project Engineer / Project Manager, Health Science and Higher Ed.



Background

Mr. Bischoff is a Senior Mechanical Engineer and Project Manager with over 18 years of Science & Technology, Higher Education Academic and large Commercial building project experience. He leads interdisciplinary teams of engineers and designers to provide customized engineering solutions to the most complex and challenging projects.

Education

Bachelor of Science, Mechanical Engineering (BSME)
The College of New Jersey, Ewing, NJ

Professional Licenses & Certifications

Professional Engineer licensed in New Jersey, Pennsylvania
United States Green Building Council (USGBC), LEED® AP BD+C Accredited Professional

Affiliations

American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)

Select Experience

- **AtlantiCare, Mainland Emergency Department Pressurization Modifications, Pomona, NJ:** A renovation project in the active Emergency Department of the AtlantiCare Mainland Campus Emergency Department to create four isolation treatment rooms that maintain negative pressure relative to the adjacent spaces. The design entailed modifying the existing patient rooms to be fully exhausted and outfitted with pressure monitoring controls to ensure the rooms remained negatively pressurized.
- **AtlantiCare Mainland / City Campus Core Lab Renovations, Atlantic City & Pomona, NJ:** A renovation project for the Chemistry & Hematology Laboratory Suite at the Mainland and City Campus sites of AtlantiCare Regional Medical Center. The design included new mechanical, electrical and plumbing services for the hospital's new phlebotomy and specimen analysis equipment.
- **AtlantiCare Mainland Meadows Patient Tower Expansions, Pomona, NJ:** An overbuild expansion project to include two new floors of med-surg patient care rooms and a new critical (intensive) care floor. The project includes a new mechanical systems for the entire building addressing infectious disease response resiliency – room pressure controls, enhanced air change rates, 100% OA flexibility and enhanced O2 system. Project also upgrades to central plants for added resilience, upgrades to bulk O2, and supplemental O2 distribution to entire existing hospital.
- **ContraState Medical Center, Freehold, NJ:** A New Jersey Natural Gas engineering solutions project to upgrade the existing mechanical and electrical systems to optimize the facility's operation and maximize their overall energy efficiency. The project included air handling unit upgrades, water-cooled chiller upgrades, cooling tower replacements, steam trap replacements, piping insulation upgrades, LED lighting upgrades and electrical transformer replacements.
- **Lancaster General Health, Operating Room Air Handling Unit Replacement, Lancaster, PA:** An air handling unit replacement and supplemental chilled water system design for an Operating Room Suite at the Lancaster General Health Suburban Outpatient Pavilion. The replacement air handling system was engineered to minimize the disruption to the Suite's operation by utilizing a phasing implementation plan that allowed the new unit to be installed while the existing unit remained in place and operational. The supplemental chilled water system provided redundancy for the critical Operating Room Suite.
- **Monmouth Medical Center, Long Branch, NJ:** A New Jersey Natural Gas engineering solutions project to upgrade the existing mechanical and electrical systems to optimize the facility's operation and maximize their overall energy efficiency. The project included air handling unit upgrades, steam trap replacements, LED lighting upgrades and electrical transformer replacements.
- **Montclair State University, CELS Vivarium Modifications Study, Montclair, NJ:** An in-depth feasibility study that evaluated the current mechanical systems serving the vivarium at the University's Center for Environmental and Life Sciences (CELS) facility. Under this study, the modification requirements for the mechanical systems were evaluated and three plausible

options were detailed that would bring the vivarium in compliance with the current AAALAC requirements. The three options were schematically priced for the University's use in developing a project budget.

Previous Experience

- **Brookdale Community College, Science, Technology, Engineering and Math (STEM) Building, Wall Township, NJ:** A new 45,000 GSF STEM Building that accommodates and supports the growth of the school's science, nursing simulation, and engineering programs; as well as providing additional common areas and teaching/classroom environments. The project includes all new site utilities and infrastructure, with new building engineering systems to support the program.
- **Community College of Philadelphia, Biology Laboratory Renovation, Philadelphia, PA:** A 20,000 GSF renovation of biology laboratories and associated spaces in the West Building. Renovated spaces include biology labs, anatomy and physiology labs, a micro-biology lab, a multi-purpose lab, as well as various preparation and storage areas, offices, classrooms, and student study areas. Renovations are taking place in multiple phases while the building remains occupied.
- **Drew University, Hall of Sciences Building, Chemistry Laboratory Renovation, Madison, NJ:** A phased renovation of existing chemistry laboratories and the associated support spaces to meet the University's growing chemistry department. The renovations included full replacement of chemistry laboratory suites with new fume hoods and the central hazardous exhaust system to support the new and expanded chemistry department. A new air handling unit was also designed to provide the increased make-up air required for the additional fume hoods.
- **Louisiana Cancer Research Center, New Orleans, LA:** New construction of a 166,000 GSF cancer research facility with 6 floors of research laboratories, administration / office space and a 10,000 GSF vivarium. A 4-floor above ground parking structure supports the building and a pedestrian walkway and utility bridge connects this project to adjacent buildings and central utility plant.
- **Montclair State University, Mallory Hall / Finely Hall Relocation, Montclair, NJ:** Relocation of three existing educational laboratories and several classrooms to a new building. The project required a new laboratory (hazardous) exhaust system for the newly relocated laboratories.
- **Montclair State University, Finely Hall Renovation, Montclair, NJ:** Conversion and renovation of existing science laboratories to liberal arts classrooms. The project required a complete HVAC system overhaul that included VAV rooftop units with hot water coils, steam to hot water exchanger systems, variable air volume boxes, air distribution systems and building automation.
- **New Jersey Institute of Technology, Life Science & Engineering Center, Newark, NJ:** A 4,000 GSF fit-out in the University's Life Science and Engineering Center (LSEC) for a new Cell & Gene Therapy suite. The project included laboratory space, laboratory support space, two clean rooms (with air lock ante rooms) and general storage / locker room spaces. The house air systems were utilized for the fit-out and two new air handling units were designed to support the clean room spaces.
- **New Jersey Institute of Technology, Tiernan Hall Forensic Laboratory Renovation, Newark, NJ:** A 2,000 GSF renovation of an existing laboratory to provide a world class, state of the art forensic science laboratory. The project utilized the existing house MEPFP systems to provide all the required services for the new laboratory.
- **Princeton University, Forrestal Campus Machine Shop & Gas Dynamics Lab Renovation, Princeton, NJ:** Modification of the existing MEP/FP infrastructure within the 2,600 square foot Campus Machine Shop and Gas Dynamics Research Laboratory to accommodate a new large scale research wind tunnel.
- **Princeton University, Jadwin Hall Gravity Initiative Renovation, Princeton, NJ:** A 8,000 GSF renovation of the 4th floor to house a new 'Gravity Initiative' suite. The renovation included 15 new offices, various meeting spaces, open collaboration lounges, general gathering/seating areas, a coffee station, and a catering kitchenette. Building envelope upgrades included new exterior glazing along the north and south facades to capture additional natural light.
- **Princeton University, Jadwin Hall Secondary Chilled Water Infrastructure Upgrades, Princeton, NJ:** Evaluation of the existing secondary chilled water infrastructure to determine the current available capacity and the modifications required to accommodate the capacity based on projected loads from recent laboratory renovations. This project included a full chilled water load

analysis of the existing facility and documentation of the modifications required at the primary / secondary plate and frame heat exchangers, as well as on the pumping side, including but not limited to, piping distribution and secondary chilled water pumps.

- **Princeton University, Jadwin Hall, Renovations and Upgrades, Princeton, NJ:** This project includes phased HVAC upgrades for a 240,000 sf building that houses the Physics Department faculty, staff and student offices, classrooms, a lecture hall, the largest machine shop on campus, and teaching and research laboratories. Antiquated HVAC induction air systems were replaced with active chilled beams and radiant panels for the perimeter offices. Dual-duct and multi-zone systems were converted to single-duct VAV. Project also included window replacements, lighting upgrades and life-safety upgrades, all while building was occupied and utilized.
- **Princeton University, Schultz, Moffett, & Guyot Laboratory Energy Audits, Princeton NJ:** An in depth study of various energy conservation measures for 268,000 sf between three of the university's research/teaching laboratories. The study was a continuation of the recent ASHRAE Level 1 and Level 2 energy audits and included energy conservation measures that ranged from DDC control upgrades to conversions of 100% outdoor air systems to recirculated air systems.
- **Princeton University, Lewis Thomas Laboratory, HVAC Upgrades, Princeton, NJ:** This project includes NJ Office of Clean Energy, Pay for Performance program upgrades to the existing HVAC systems in an 120,000 sf research and teaching lab building in order to reduce energy usage by more than 20%. Upgrades include variable volume air and water systems, reduced lab air change rates, facility air quality monitoring system for ventilation reset, new DDC controls, and heat recovery modifications.
- **Princeton University, Guyot Hall/Moffett Laboratory, Ongoing Laboratory Renovations, Princeton, NJ:** More than a dozen laboratory renovations have been provided in the Moffett/Guyot Science Complex for the Geosciences and the Evolutionary Biology Departments along with Princeton Environmental Institute. These projects have varied in size from a single laboratory room to a full floor of a wing and are typically necessary to accommodate new staff appointments or new research grants. All projects were completed while the building remained occupied.
- **Princeton University, Jadwin Hall, Ongoing Laboratory Renovations, Princeton, NJ:** More than a dozen laboratory renovations have been provided in the Jadwin Hall for the Physics Departments. These projects have varied in size from a single dry type laboratory room renovation to full renovations to create optical laboratories and clean rooms with tight temperature tolerances and intricate sequences of operation to maintain space temperature and relative humidity within the end user's required ranges. All projects were completed while the building remained occupied.
- **Princeton University, Engineering Quadrangle (EQuad), Ongoing Laboratory Renovations, Princeton, NJ:** More than a dozen laboratory renovations have been provided in the Engineering Quadrangle (EQuad) for the School of Engineering and Applied Science. These projects have varied in size from a single laboratory room to a full laboratory suites and are typically necessary to accommodate new staff appointments or new research grants. All projects were completed while the building remained occupied.
- **Princeton University, Jadwin Hall Center for Theoretical Physics, Princeton, NJ:** This 10,000 sf renovation of the 4th floor of Jadwin Hall into professor's offices, lecture hall, coffee break areas, student study spaces and lounges included replacements and upgrades of the electrical, mechanical and plumbing systems. The antiquated HVAC induction air system was replaced with active chilled beams for the perimeter offices. A new fire protection sprinkler system was added to this portion of the building as the first phase of a comprehensive building fire protection upgrade.
- **Princeton University, Friend Center Renovations, Princeton, NJ:** A 30,000 GSF renovation to convert an existing engineering and architectural library into an open concept graduate student office for the School of Engineering and Applied Science. The renovation comprised three floors of the facility and included MEP/FP updates to accommodate the new space usage and configuration. The existing house mechanical systems remained while updates to the terminal devices, distribution network and control system were provided.

- **Princeton University, Low Pressure Air Filter Replacement Study, Princeton, NJ:** A design study that provided the analysis, design and specification of replacement air filters for 360+ air handling units on campus with new low pressure-drop, energy efficiency air filters to aid in the overall reduction of the campus energy consumption and help the University reach their goal of operating at 1990 carbon levels in 2020. Under this project, a request for proposal (RFP) was developed for Princeton University to publish to various filter manufacturer's for them to bid.
 - **Princeton University, Moffett Laboratory Aquatics (Vivarium) Laboratory Renovation, Princeton, NJ:** A 4,000 GSF renovation of the University's existing aquatics laboratory (vivarium) to better define the space programming and improve the overall efficiency between the various procedure and holding rooms. Additionally, the upgrades addressed areas that were deficient with respect to the American Associate for Accreditation of Laboratory Animal Care (AAALAC) guidelines. The project included the design of an interim aquatics center in an adjacent facility for the researchers and animals to be relocated to during the renovation.
 - **Princeton University, Frick Chemistry Laboratory, Ongoing Laboratory Renovations, Princeton, NJ:** A handful of laboratory renovation projects to the newly constructed Frick Chemistry Laboratory to incorporate additional fume hoods in various laboratories throughout the facility. These projects include the analysis of the existing MEP/FP systems, design and specification of modifications required to accommodate the additional fume hoods and assistance during construction.
 - **Rutgers, The State University of New Jersey, Waksman Institute of Microbiology Addition, Piscataway, NJ:** A 15,000 GSF addition to the existing Waksman Institute for Microbiology on the Rutgers University, New Brunswick (Piscataway) campus. The addition included three new floors of research laboratory and office space that will connected to the south end of the existing facility constructed in 1980. The project was designed for LEED® Silver Certification. The MEP / FP scope of work included a new air handling unit, new general and hazardous exhaust systems (separate systems), new air distribution networks throughout the addition, a new electrical infrastructure upgrade at the main complex to support the new addition, laboratory gases and hydronic infrastructure to support the laboratories and a new fire pump.
 - **Rutgers, The State University of New Jersey, School of Health Related Professions, Piscataway, NJ:** A 10,000 GSF renovation of the University's New Brunswick (Piscataway) Campus Research Tower to house the School of Health Related Professions (SHRP). The fit-out was comprised of office and administration spaces along with a Simulation Laboratory, teaching classrooms, a conference space and student lockers.
 - **Rutgers, The State University of New Jersey, Doolittle Laboratory and Related Facilities, Piscataway, NJ:** Renovated 10,000 sf of existing buildings (mostly laboratory space) into teaching classroom space and laboratories for various departments dislocated by the demolition of Doolittle Hall and related facilities. These classroom spaces were designed for use by groups from General Biology, Human Parasitology, Functional Human Anatomy Laboratories, Anatomy and Physiology Laboratories.
 - **State University of New York (SUNY), Farmingdale State College, School of Business, Farmingdale, NY:** A new 42,000 GSF business school that was part of an \$18.5 million campus-wide capital campaign to expand and modernize the school. The classrooms and lounges were designed with collaborative learning in mind. The first floor of the building features the largest classrooms in the building, and in order to promote active discussion and learning, each of these classrooms is tiered on each side around a centrally located teaching stage area. One of the 64-seat classrooms features a central folding partition, allowing division into two smaller, traditionally laid out classrooms. The interior of the building also features mini-lounges for students, which further promotes interactivity. In addition to the public spaces, there are also two main lounges for students who prefer to work in a quiet working environment. The building incorporates high efficiency heating, cooling, and lighting systems that significantly reduces energy use.
 - **University of Pennsylvania, Information Systems & Computing Facility, Philadelphia, PA:** A renovation of the University's 41,000 GSF Information Systems & Computing (ISC) facility at 3401 Walnut Street to better the suit the current and future needs of the department. Under the renovation, multiple wings in the facility were renovated and included MEP upgrades to accommodate the new space configurations. The project included new conference rooms of various sizes, new private and open offices spaces, a kitchenette, upgraded HVAC systems, upgraded lighting, renovated toilet rooms and a new tele-communications area.
-

