

LARGE PROJECT EXPERIENCE

State Office Building

340,000 square foot project to convert existing warehouse to a two-story office building. HVAC systems consist of VAV with 12 air handlers utilizing central plant chilled water and high-pressure steam. Building is designed with an 8000 square foot computer center and provisions for a future computer room of up to 24,000 Square Feet. Matrix Consulting Engineers, Inc.'s responsibilities included all HVAC, plumbing, fire protection, lighting, power, fire alarm, and raceway systems for data, security, and telecom systems.

Jackson High School Additions and Renovations

Four-story 250,000 square foot project provided a complete retrofit of all plumbing, HVAC, electrical systems and including science classroom addition, cafeteria addition and new west entry addition. Matrix Consulting Engineers, Inc. was responsible for design of all mechanical, plumbing and electrical work including new boiler plant, new chilled water system and all associated heating, air conditioning and air handling systems. Electrical work included an expansion electrical service, replacement of switchgear, upgrade of all electrical distribution systems, new fire alarm and security system, data system raceway, and lighting systems throughout.

Cooley Center

Renovated the Mechanical and Electrical systems for the existing 225,000 square foot Commerce Center Building into Facility and Administrative Offices for Cooley Law School, Lansing, Michigan. Project included new HVAC, plumbing, fire protection, life safety systems, fire pump, emergency power generation, new power distribution, security systems, phone/data wiring systems, fire alarm systems, lighting for interior and exterior, and digital building automation system and card access system.

Capital View Complex

150,000 square foot, 10 story office building with an attached 1,300 space parking ramp. First floor restaurant, band and conference center. Project included new HVAC, plumbing, fire protection, life safety systems, fire pump, new power distribution, security systems, phone/data wiring systems, fire alarm systems, lighting for interior and exterior, and digital building automation system and card access system.

Moulton Building

New 120,000 square foot office building for the Michigan Claims Office of Auto Owners Insurance Company located in Delta Township, Lansing, Michigan. Design included HVAC systems, plumbing, fire protection, snow melt systems, chemical free cooling tower treatment systems, emergency power generation, interior and exterior lighting, fire alarm systems, CCTV and security systems, phone/data wiring and raceway system, power distribution system, and digital building automation system.

Lansing Community College - Health and Human Services Careers Building

Project consists of a new 3-story plus Lower Level Academic Building with approximately 140,000 SF. The building houses the Dental Hygiene; Massage Therapy; EMS; Nursing; and related labs and offices. Matrix CE provided complete mechanical and electrical design services including the following HVAC Systems with chilled water plant, plumbing Systems, dental Lab gases, Energy Recovery Ventilation Systems, Atrium Life Safety Systems, Fire Protection Systems and Fire Pump, Building Automation System, Power Distribution and Emergency Generators, Lighting Systems, Fire Alarm Systems, Audio/Visual Systems.

Lansing Community College - Gannon Vocational-Technical Building Renovations

The Gannon Vocational-Technical building is a 5 story building including the basement with a total area of about 300,000 square feet.

The plumbing systems were evaluated and portions in poor condition were replaced and now meet the requirements of the new spaces. Mechanically, Matrix evaluated the existing systems to determine what should be reused and what should be removed. The new mechanical system consisted of types of systems to meet the needs and room constraints of the building. The first system was a VAV system with reheat. The second system was a blower coil system supplied with ventilation air from energy recovery units. Heat pumps were designed in a small portion of the facility to take advantage of the spare capacity of the preexisting heat pump system which was in good condition. The chiller plant was modified to replace the existing chillers with new energy efficient chillers. We designed a water side economizer system to serve the new blower coil units with minimum renovations to the existing piping beyond the mechanical room. This system was not only used for its energy efficiency but also for its compactness due to limited space constraints.

Accident Fund Building

New high rise office building consists of 150,000 square feet with 10 stories, 5 story atrium, computer center, fire safety and life safety systems, computerized building management system, and emergency power generation systems.

The HVAC systems consist of a water source heat pump system, with indoor evaporative coolers, steam converter, and central ventilation systems.

The fire suppression systems include fire pump, wet sprinklers, dry pipe sprinklers, preaction double interlock systems, and Halon gas system.

Plumbing systems includes pressure booster systems, sump pumps, atrium irrigation systems and sewage ejector pumps.

Lighting systems consists of indirect pendant mounted metal halide fixtures throughout the office space and custom chandeliers and grow lighting in the atrium.

Power distribution systems consists of a dual 2000 amp, 277/480-3 phase-4 wire system with two rate structure for lower cost power rates offered for heat pump systems. Power is distributed thru the building using a modular /flexible wiring system.

The building also contains a complete raised floor throughout the office areas with a modular under-floor power distribution and data/voice wiring system.

The life safety systems consist of a computerized fire alarm system, security and card access system, atrium smoke control systems, and emergency power generation system.

The Data Center is equipped with a 250 KVA UPS; water cooled precision AC units with domestic water backup. The Data Center was equipped with an Inergen fire suppression.

State of Michigan - Mason Hall

Steven T Mason Building project consists of renovating an eight story building plus basement area that is approximately 253,000 square feet gross area. The HVAC, plumbing, electrical, and fire protection design consisted of evaluating the existing systems to determine the condition of the associated equipment. The mechanical and electrical systems were replaced and upgraded both due condition age and also to assist in achieving LEED silver. Throughout the project matrix helped with value engineering ideas to keep the project in budget. The design was performed in Revit with clash detection performed and adjusted as needed.

Dart Container Building 5 Office

Project consists of designing a new 150,000 square foot office space inside an existing warehouse. The project will include complete new mechanical heating, cooling, ventilation, kitchen, plumbing, lighting, power, and emergency generator. The design was performed in Revit with clash detection performed and adjusted as needed.